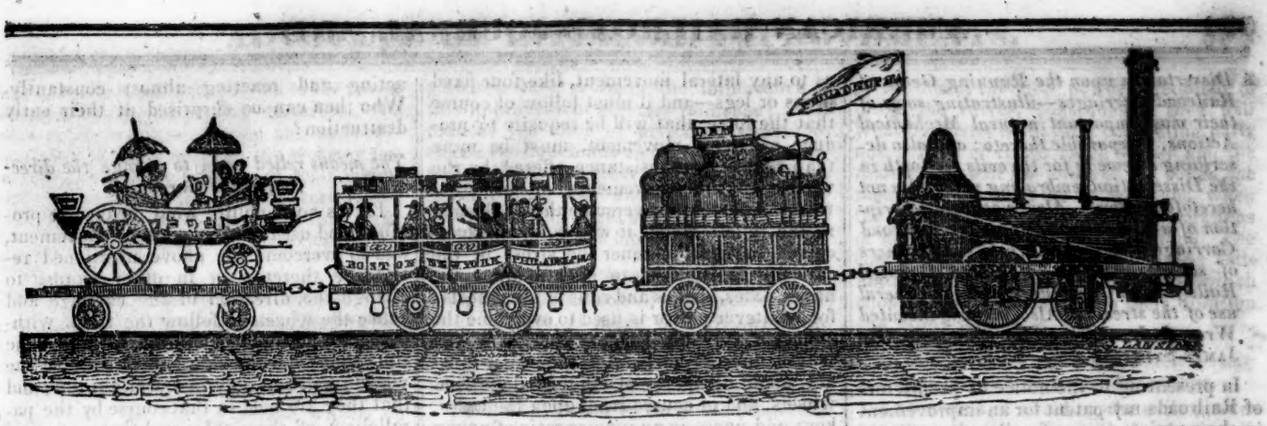


# AMERICAN RAILROAD JOURNAL,
## AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, SEPTEMBER 26, 1835. [VOLUME IV.—No. 38.


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## AMERICAN RAILROAD JOURNAL.

NEW-YORK, SEPTEMBER 26, 1835.

RUNNING GEARS OF RAILROADS. — We commence in this number, "A Dissertation upon the Running Gears of Railroad Carriages," by MR. JAMES STIMPSON, of Baltimore, which will be found well worth reading. It will be concluded in our next.

SANDY AND BEAVER CANAL.—We would call the attention of those contractors who are accustomed to *tunneling* for Canals or Railroads, to an advertisment of E. H. GILL, Esq., Engineer, in this number of the Journal—from which it will be seen, that the Tunnel is to be about 900 yards, or nearly half a mile, in length—mostly through a sand-stone rock.

### TO TUNNEL CONTRACTORS.

Proposals will be received by mail, or otherwise, for excavating a Tunnel on the summit of the Sandy and Beaver Canal. The Tunnel is 900 yards long, the material to be removed is a soft sand-stone rock, the highest part of the ridge through which it passes is about 90 feet above the top of the Tunnel. As the deep cuts at the termination are not excavated, most of the material will have to be removed through shafts. Proposals must be accompanied with good recommendations, as to skill and competency.

E. H. GILL,
Engineer.

New-Lisbon, Ohio, Sept. 17, 1835. 38—6t

NEW-ORLEANS AND NASHVILLE RAILROAD.—This road, which at first, by many of our readers, and indeed even by ourself, was considered more as a subjeet of conversation, than of serious consideration, is to be pushed forward with energy and spirit. Fifty miles of the road, as will be seen by the annexed notice, is to be put under contract in December *next*. And it affords us pleasure to say, as we are enabled to do, from information derived from the President and Chief Engineer,—the latter of whom, H. J. RANNEY, Esq., is now on his way to Liverpool, to make contracts for the Rails,—that the Company intends to make it a road of the most substantial character, especially where a *wood* rail and a flat bar of iron are used. The superstructure is to be of wood. The wood rail is to be 7 by 9 inches, and the *iron rail* $2\frac{3}{4}$ *by* $1\frac{1}{2}$ *inches*, which is, we believe, both thicker and wider than any other *flat* rail in use.

The survey proves this route to be one of the most feasible that has been projected in any part of the country. The maximum ascent, in the direction of the *greatest* business, that is *towards* New-Orleans, is only ten feet per mile, and *from* New-Orleans it is only 20 feet.

We expect to receive a copy of the report of Mr. Ranney in a few days, when we shall enter more into particulars. In the mean time we would call the attention of contractors to the following notice.

### NEW-ORLEANS & NASHVILLE RAILROAD.

NOTICE TO CONTRACTORS.

The New-Orleans and Nashville Railroad Company having decided to place under contract the first fifty miles of the Road, on the 15th day of December next, Proposals will be received at their Office, in the City of New-Orleans, from the 15th of November to the 15th day of December next, for the Graduation and Bridging of the same.

The Superintending Engineer, R. S. Smith, will be upon the ground to give every explanation relative to the manner of making Proposals, and such other information as may be required.

Of persons not personally known to the Engineer, there will be required certificates of character and qualifications.

This part of the road, extending along the shore of Lake Pontchartrain, is perfectly healthy throughout, and being the commencement of the most extensive work in the world, it cannot fail to be of great importance to Contractors to identify themselves with the work at its commencement, as those who are known to the Company as responsible and efficient will certainly be preferred to strangers during the future progress of the road.

The country through which the line passes is generally high pine ridge, and perfectly healthy.

H. J. RANNEY,
Chief Engineer N. O. & N. Railroad.

Engineer Office, N. O. & N. Railroad,
Aug. 25, 1835. 37

GEORGIA RAILROAD.—We are gratified, says the Augusta, Geo., Constitutionalist of the 8th inst., in being able to inform our readers, and the friends of this laudable undertaking throughout the State, that the work on this road is steadily progressing under the direction of its chief engineer, J. EDGAR THOMSON. The line of this road, after leaving Augusta, pursues the elevated piney ridge, separating the waters of the Savannah river from those of Brier Creek and the Ogechee. This ridge is celebrated for its salubrity, and is believed to be quite as healthy as any part of the United States. European laborers have been engaged on the work during the whole summer, without scarcely a single case of sickness.

The contracts entered into in June last, for the graduation of upwards of 20 miles of this road, are rapidly progressing towards completion, and it will be seen by the annexed notice, that 30 miles more of the Road will be placed under contract on the 31st day of October next.

### GEORGIA UNION RAILROAD.

NOTICE TO CONTRACTORS FOR EXCAVATION AND EMBANKMENT, ETC.

Proposals will be received at the Engineer's Office in Augusta, between the 20th and 31st day of October next, for the excavation, embankment and bridging on 30 miles of the Georgia Railroad terminating northwest of Warrenton.

Contractors, unless personally known to the Engineer, must accompany their proposels with certificates or recommendations as to qualification and character.

Profiles of the line and plans of the different constructions on it, will be exhibited at the office after the 19th of October, and all necessary information in relation to the work afforded by the Chief Engineer or his assistants.

JOHN EDGAR THOMSON,
Augusta, Sept. 8, 1835. Civil Engineer.

*A Dissertation upon the Running Gears of Railroad Carriages—illustrating some of their most important natural Mechanical Actions, inseparable thereto; and also describing a remedy for the evils set forth in the Dissertation, embracing principles not heretofore known. Also, a concise description of a Turning Platform for Railroad Carriages—a Curvature to turn corners of streets, wharves, &c., and Grooved Rails for the Curvatures, and the general use of the streets. Also, a newly invented Wrought Iron Wheel, for Railroads.* By JAMES STIMPSON.

In presenting to the notice of proprietors of Railroads my patent for an improvement in the running gears of railroad carriages, it may perhaps be proper for me to set forth the causes which called for this improvement, together with its advantages over any other mode now in use. In doing this it will be necessary to illustrate the true principles of the natural actions and mechanical motions of railroad carriage wheels as heretofore applied; there being several leading characteristics in their operations inseparably connected with them; some of which are prominent and powerful in their effects; and from the observations which I have been led to make, I am well convinced that they are not well understood, for otherwise their ill effects would ere this have been counteracted. I think I am warranted in my conclusions by the fact, that numberless alterations have been made on both sides of the Atlantic in the running gears of railroad carriages, with a view to overcome the difficulties that have constantly attended their operations.

To common observers the application and use of the running gears of railroad carriages appear extremely simple, and unattended with difficulties—merely round wheels running upon smooth iron rails—and at first sight one would be led to believe that such apparent simple and easy movements must necessarily operate without risk of damage either to the wheels, the carriage or the rails. But, in order to form a correct opinion upon this subject, it is necessary to observe that the natural course of running of four wheels of equal diameter is only in a straight line, when their axles are kept parallel to each other; and that whenever the railway deviates from a straight line, it becomes necessary, as wheels are now applied or geared to the carriage, to overcome a great proportion of their powerful adhesion to the rails. These facts have not been sufficiently taken into consideration by those who have hitherto endeavored to obviate the difficulties attending the passage of carriages over curves, crossings, crooks, and unequal undulations in railways; yet this adhesion, which must be overcome, very often constitutes the first great cause of all those difficulties, and renders it necessary, as will be hereafter explained, that the wheels should be made fast to their axles, especially when in the least conical; and that to prevent an extra liability of running off the tracks, their axles should be always confined in positions parallel to each other, while their flanches and cones are relied upon to keep them upon the rails, and cause them to conform to the course of the railway. It must also be observed, in order to a correct understanding of the subject, that when the wheels are fixed fast, and set true upon their axles, and their axles are kept parallel with each other, they cannot, without the use of great force, be moved in any other than a straight line, but are in fact, as to any lateral movement, like four fixed props or legs—and it must follow of course that the force, that will be requsite to produce a lateral movement, must be more than equal to the resistance offered by the wheels to that movement; or in other words, sufficient to overcome their adhesion to the rails. Hence it will be readily perceived in what manner the stress of the carriage is brought to operate upon the naves, axles, spokes and rims of the wheels: for whatever power is used to overcome the adhesion between the peripheries of the wheels and the surface of the rails, must act upon all parts of the carriage and wheels, and of course react upon the axles, keys and naves in an inverse ratio of power proportionate to the difference between the diameters of the wheels and those of their axles. Now it is well known that this adhesion of the wheels to the rails is proportionate to the amount of surfaces in contact and the superincumbent weight to a certain extent; as has been illustrated by the experiments of Mr. George Rennie, Fellow of the Royal Society, London, and ascertained by him to be equal to forty-three per centum for seven hundred and nine pounds upon a square inch—or for every square inch of wheel and rail in contact.

By a calculation based upon these facts it will be found, that upon rails of the usual width, each wheel of a carriage, with a common load, adheres to the rail with a power of more than three hundred pounds. Now to produce an instantaneous lateral movement upon the rails, three of the wheels, as now applied and used, must slide, while the fourth will only have to oblique a little, or twist as it were, in order to conform to the direction of the others—and, by the way, this obliquing or twisting alone produces a damage to the rails and wheels equal to the force exerted by their adhesion together—and hence the great impropriety of using vibrating axles; for it is well known that they are made to oscillate or vibrate far beyond what is necessary to enable them to follow the true course of the road, besides that produced by every considerable impediment to motion under the peripheries of the wheels. I therefore propose to consider some of the most important effects produced by different modes of construction as they suggest themselves to my mind; and also the remedy.

*The natural power of adhesion of the Wheel to the Rails.*

The adhesion of one wheel being equal to three hundred pounds, that of three wheels will be equal to nine hundred pounds; therefore, a force more than equal to that resistance must be exerted by something in order to overcome it, whenever a lateral movement is required—and it must be borne in mind that this force, when one wheel has to move all the rest laterally, reacts upon the axles, keys, wedges, pins, or whatever may be used to fasten the wheels to the axles, with a power inversely proportionate to the excess of the diameter of the peripheries of the wheels over that of the axles—which is in most cases as twelve to one, and consequently amounts to ten thousand and eight hundred pounds at the nave of the wheel which produces the movement; and three thousand and six hundred pounds upon each of the others at their naves; and as roads are made in this country with frequent curvatures in different directions, and also with crossings from one track to another, when the power to be exerted is still greater than upon curves, this stress upon the axles and wheels is acting and reacting almost constantly. Who then can be surprised at their early destruction?

*The means relied upon to change the direction of the Carriage.*

Let us now inquire what means are provided and used to effect a lateral movement, and to overcome the above mentioned resistance thereto; or in other words, to change the direction of the carriage and cause the wheels to follow the track without force; keeping in mind at the same time that from the causes before stated the wheels will run only in a straight line, and that they are held in that course by the parallelism of their axles and their power of adhesion—that is to say, a power of adhesion equal to three hundred pounds for each wheel at its periphery—and we find that a *single cone* is all that is relied upon to effect the object and to change the direction of the carriage when required.

*The amount of the adhesion of a cone compared with that of the tread of the Wheel.*

Let us next inquire what power one cone has to enable it to overcome the resistance of nine hundred pounds; which will be the resistance of three wheels when one cone acts alone, as before stated. Now, the power of adhesion being proportionate to the bearing surface and weight, up to seven hundred and nine pounds for each square inch of wheel and rail in contact, it follows that when a cone comes with its obtuse angle in contact with a flat horizontal rail, its bearing surface is thus reduced to less than one fourth of that of either of the other wheels, which, at the moment when the cone begins to act, are upon their treads, its power of adhesion by its reduction of bearing surface is thereby reduced to less than seventy-five pounds. How can a power of seventy-five pounds, acting with no extraneous advantages, produce a change in the direction of the carriage, which is held in its straight course by a power of nine hundred pounds? It must be admitted that it is impossible. It follows then that the wheel on its cone must itself slide as much as its periphery exceeds that of either of the wheels running on their treads; and that it must continue to slide in that proportion until the vertical part of the flanch impinges against the edge of the rail, when the resistance to a change of direction in the carriage will be overcome by main force; that is, by means of the flanch. This will always be the case, unless the full size of the cone on the hind wheel, or a diameter thereof corresponding to that of the front wheel upon the same side of the carriage, comes in contact with the rail in time to act before the flanch of the front wheel is caused to impinge as aforesaid, for then the direction of the carriage will be changed by the joint action of the two cones, which have a leverage power over their two fellows equal to the length of the axles; and as the wheels upon their treads have only to oblique as they roll, and not to slide, they will yield to the action of the cones of their fellows.

When the direction of the carriage is about to be changed or turned from a straight line at the commencement of a curve, the fore and hind wheels on the outside of the curve cannot be in contact with the rail upon equal diameters simultaneously; consequently there must be a sliding somewhere until the hind wheel reaches the point where the curve commences and runs upon its cone to a diameter corresponding with that of the fore wheel: during all which time the strain upon the fastenings

and axles must be in proportion to the power of adhesion, &c., as before described. To this cause we may ascribe the early destruction of the wheels by the wearing out or indenting of the surfaces of their cones, and their constant tendency to work loose; and hence also the danger of using large wheels, unless the size of the axles be also large.

*The ill effects produced by the cone not being able to change the direction of the carriage in season, and also why it is not changed, &c.*

There is one extremely pernicious effect produced by the forcing of the wheels on one side of the carriage upon a higher part of their cones than is necessary before they are able to turn the carriage into the true course of the railway, to which I would call particular attention.

It is a well known fact, and has often been observed by travellers on a railroad, that the carriage will run from one side of the railway to the other, producing a kind of vibratory motion extremely unpleasant to the passenger. This is caused by the cone's not being able to change the direction of the carriage in season as before stated, and which is produced in the following manner: The wheels on the outside of the curve or crook at its commencement having been forced to run upon the very highest part of their cones by the causes herein before enumerated and explained, that is, want of power to change their course, they are in contact with an increased diameter to an extent that causes them to have a tendency as soon as they can act to turn a much shorter curve than that required by the railway upon which they are running: so that they necessarily cause the carriage to give a rank shear across the railway, whereby it is thrown upon the opposite side, and the other wheels forced upon the higher part of their cones on that side, also causing the carriage to take another shear back again; and thus it continues to vibrate from side to side, until all the wheels are brought to run upon that part of their cones or treads which adapts their diameters to the true course of the railroad. This vibratory motion will be produced, not only by curves and crooks, but by any unequal undulations or unevenness in the surface of one track of the railway, more than the other: thus, when it becomes necessary for one wheel to describe more space in the same time than either of the others—and from the causes set forth it cannot do it—there must be a dragging or sliding, which, whenever it does occur, an immense stress upon the wheels is produced, and a proportionately unnecessary wear to both rails and wheels.

*The improvement will allow the carriage to change its course of direction with perfect ease.*

One of the beauties of my improvement consists in its being a complete remedy for the evil consequences above set forth — for this improvement permits a single cone to change the direction of the carriage the instant it touches upon the rail at the commencement of a curve, and steer it precisely in the course of the railway, without causing the flanches to impinge against the rails, or producing any stress upon the axles, the wheels, or the carriage.

*The importance of the improvement at the crossings.*

But when the carriage is about entering a switch at a crossing the importance of this improvement becomes immense; for it reduces the force of action or stress between the flanch and switch more than one-half; which is a great security against its running over the switches, and cutting away their top edges or breaking the flanch by the force of the blow.

*Large Wheels may be used, &c.*

By the application of my improvement, large wheels, if made in a proper form, may be used with safety where the tracks have no very short curves, and without increasing their weight or that of the axles beyond what would be their due proportion for their increased size, without any regard to the stress caused by adhesion, &c. With respect to the size of wheels, there is something to be said in favour of both large and small. Small wheels are lighter, safer in turning short curves, and easier to load heavy goods upon: but the smaller the wheel the less the bearing surface upon the rails: and the more rapidly will both wheel and rail be cut and worn away by the crushing of gravel between their surfaces, and also the metal itself. Small wheels make more revolutions in a given space, which creates more heat at the gudgeon and consumes the oil much faster. They also require more power to move them; and when passing over stones or any uneven places in the tracks, their concussions therewith are much more severe and injurious to wheels, carriage and rails, under equal speed, than when the wheels are large; and therefore they are more unpleasant to passengers both in their actions and on account of the noise they produce. When the roads are nearly level and tolerably straight, I should prefer wheels of thirty-six to forty-two inches in diameter for passenger cars that are intended for speed; and with the use of my improvement wheels of this size will cause less expense per annum, taking every thing into view, than smaller sized wheels.

When the wheels are composed partly of iron and partly of wood, and the stress naturally resulting to wheels made fast to their axles is properly considered, together with the effects produced upon them by the variations of the weather, the immense importance of the easement to motion, and relief from lateral or other strain, afforded by the application of my improvement, becomes the more conspicuous. Indeed for such wheels the use of this improvement is as indispensable as iron shoes are to horses upon hard roads.

The saving of power to a locomotive that would be made by the application of my improvement throughout a train of cars, is worthy of particular consideration; for without it in the same sliding of the wheels, which has been before spoken of, would appertain to each car, and thus the resistance resulting therefrom would be increased to a large amount by the number of cars in the train. It would thus require a proportionate increase of power to overcome this resistance; the exertion of which would produce extra stress upon the engine and boiler, and render it necessary to keep up the fire by an extra quantity of fuel, the excess of which heat is most certain to destroy the fire pipes. Now if the train of cars of the same weight can be moved over the same road with fifty pounds of steam instead of sixty, the saving is more in every respect than it would at first sight appear to be, and more especially in respect to the effects produced upon the engine, boiler, fire, pipes, &c.; for the higher the pressure of the steam the more power is requisite to move the valves, consequently they will wear out faster in all their connecting parts and get out of repair much sooner, and the more liable will the joints of the boiler, the pipes and all parts be to fail; and when the least thing does give way, all operations or movements are brought to a stand. The cost of the locomotives at the lowest estimation, embraces an item of expense which should leave no auxiliary to their duration and safety unnoticed.

*The bad tendency of loose wheels — they have no power to guide the carriage.*

As a means of avoiding the evils attendant upon the use of wheels made fast to their axles, resort has been had to wheels loose upon their axles—but to this mode of gearing there exist inseparable objections, which prove that the remedy is far worse than the evil; for the wheels themselves are rapidly destroyed at their naves and peripheries—the axles within the naves, with the collars and washers, as well as the rails themselves, are also subjected to an immensely increased wear and tear. Besides these evils there is a great loss of power, for loose wheels have not the power to guide the carriage, and the consequence is that their flanches will continually impinge against the edges of the rails, and thus the flanches and rails will cut each other in proportion to the power of adhesion which the treads of the wheels have to hold the flanches up to the edge of the rails. Nor have loose wheels the power to guide the carriage even when they are provided with cones upon their peripheries; for when the carriage approaches a curve, the front wheel, which first meets it, must run up upon its cone; the effect of which is, not to guide the carriage, but to impede its own motion, for being loose, it acts independently of its fellow wheel upon the same axle, and of course when its periphery is increased, instead of its acting as a guide to is fellow, it will merely describe the same space at the same time without turning so far on its axle. Its own motion is impeded, because in the very act of running up upon its cone, it runs as it were up-hill; and its diameter being increased, it is thereby made to sustain more than its due proportion of the weight of the carriage and load; both of which circumstances produce resistance to is advance. Nor will the direction of the carriage be changed until the flanch of the wheel strikes against the rail, and then the direction will be changed, but the flanch will grind along against the edge of the rail, producing an immense resistance to its own progress, and great injury to itself and the rail.

The facts must be obvious to all who have given best subject a thought. The wheel at the can have no more power of itself to change the direction of the carriage, than the amount of adhesion of the inside of the nave to the axle; which is of itself totally inadequate to the task.

But there are other ill consequences attendant upon the use of loose wheels, some of which I will endeavor to point out. Immediately after the flanch upon the front wheel touches the rail, that of the hind wheel will do the same—when their united resistance to motion will cause that side of the carriage to lag, and if there is any play in the joints of the transverse rails of the carriage where they join to the cheeks, it will cause the wheels on the other side of carriage, (which always run free when flanches of their fellow wheels are in con-

tact with the rail,) to get in advance, and thereby keep the flanches of their fellow wheels crowded up to the rail on the other side, by the course of their own direction, and keep them continually in contact therewith.

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[From the Journal of the Franklin Institute.]

***On the comparative Corrosion of Iron, Copper, Zinc, &c., by a saturated solution of common salt.*** By A. D. Bache, Prof. of Nat. Philos. and Chem., Univ. Penn.

To the Committee on Publications.

Gentlemen,—An inquiry was addressed to me some months since, by Mr. Joseph S. Walter, Jr., in relation to the material which would be most proper to be used for pipes to convey a strong solution of common salt to a pump intended to raise it, and for the material of the pump itself. From this solution it was intended to recrystallize the salt. The circumstances being of a somewhat complex character, I determined not to be satisfied with the indications of general theory, but to try the experiment, under the circumstances of the case, as nearly as might be possible. The materials in relation to which inquiry was particularly directed, were iron, copper, brass, lead, and zinc. Of these, the rapid oxidation of iron, when exposed to a solution of common salt, is well known; the corrosion of copper by sea water is also well known; the influence of the earthly muriates contained in the ocean prevents this case, otherwise very closely resembling that in question, from corresponding precisely to it, the common salt referred to containing these muriates only as impurities. Zinc does not decompose water readily, and oxidates very slowly, even when exposed to the combined action of air and moisture; it also ranks below sodium in the list of electro-positive metals; its chloride, however, is soluble. Lead is readily acted upon by the combined agencies of air and water, first oxidating, and then passing to the state of a carbonate; its place in the list of positive electrics is below zinc, and, of course, below sodium, which latter we should expect, therefore, to have the greater affinity for chlorine; the protoxide of lead, however, and several of its salts, interchange elements with chloride of sodium. The chloiide of lead is insoluble, and hence the presence of soluble muriates acts as a protection against the corrosion of lead by water.

As the experimental results directly obtained may possibly prove of value to others than the estimable individual for whom they were to be applied, I have thought it right to put them on record.

The materials used were iron, copper, brass, lead, and zinc, the metals being as presented in commerce, and, therefore, probably not quite pure. They were prepared in rectangular plates, about two and a half inches in length, and three fourths of an inch in width, and varied in thickness from .03 to .07 of an inch. These were placed in glasses containing saturated solutions of common salt, rather less than one fourth of an inch in depth from the top of each plate being left exposed to the air. The vessels were left uncovered, and the evaporation of the water of the solutions was supplied from time to time during the exposure. The temperature in the room in which the vessels were placed, was not very different from 50° Fahr. during any part of the time.

After an exposure of about three weeks, the plates were removed from the solutions, and carefully washed and dried. Having been weighed before placing them in the solutions, they were now again weighed, and the loss of weight ascertained.

The iron plate was found covered with oxide of iron, strongly adhering to it in part, and in part deposited at the bottom of the glass containing the solution. There was upon the upper plate, and in the glass, a deposit of proto-chloride (white) of copper, colored by carbonate of copper, and a similar deposit upon the brass plate. The lead and zinc had been, to all appearance, very slightly acted upon; there was upon the latter a white deposit, probably of oxide of zinc.

The following table shows the amount of surface actually exposed to the solutions, the weight of the entire plates, and the loss of weight by the exposure. I have not reduced the weights used to grains, because the object is merely to obtain comparative results.

| Material exposed. | Surface exposed. | Weight of plate. | Loss of weight. |
|---|---|---|---|
| Name. | Sq. inch. | Grammes. | Grammes. |
| Iron, | 4.656 | 6.320 | .312 |
| Copper, | 3.936 | 10.720 | .058 |
| Brass, | 4.138 | 5.150 | .029 |
| Zinc, | 4.572 | 6.115 | .003 |
| Lead, | 4.762 | 20.080 | .013 |

From the foregoing data I have calculated, below, the loss of weight, in grains, which a surface of forty square inches, or a plate of twenty inches on each surface, and very thin, of the materials would have suffered, and the relative loss by each material, referring to that which lost least, namely, the zinc, as the standard of comparison.

| Material. | Loss of w'ght by 40 square inches of surface. | Comparative loss by exposure of same surface. |
|---|---|---|
| Name. | Grains. | Ratio. |
| Zinc, | 0.40 | 1.00 |
| Lead, | 1.68 | 4.20 |
| Brass, | 4.31 | 10.78 |
| Copper, | 9.07 | 22.68 |
| Iron, | 41.27 | 103.18 |

The corrosion of the iron, with the same extent of surface as zinc, and exposed to a solution of common salt for the same length of time, is thus shown to be upwards of one hundred times [that of the zinc. The zinc appears to protect the copper in the brass, probably by rendering it electro-negative, and thus diminishing the affinity of the chlorine, which would otherwise destroy the copper.

Since the experiments indicate zinc and lead as the materials to be selected from those named, on account of the slight corrosion which they suffer, lead would obviously have been the material selected for the pipes to conduct the solution of salt to the pump, and zinc for the material of the pump, the selection depending upon well known properties of these metals.

The coatings formed upon both the lead and zinc, would protect the underlaying surface from action, unless removed by mechanical force.

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[*From the Albany Daily Advertiser.*]

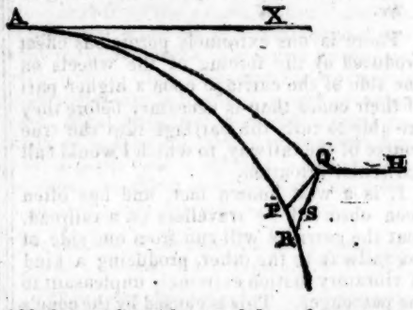
Sandusky and Mad River Railroad.—On the 16th of this month, yesterday, thirty-five miles of the road were put under contract, and the residue of the distance, one hundred and eighteen miles, is preparing for contract. A great celebration was to take place this day in honor of the commencement of the work, and Gen. Harrison was expected to be present. Mr. Bell the Engineer-in-Chief, has received a request from the Leipsic and Dresden Railroad Company, to come immediately over, and take charge of that work.—This is the first instance of an American having received such an offer.

[For the American Railroad Journal.]

***On the Location of Railroad Curvatures; being an Investigation of all the Principal Formulas which are required for Field Operations, in laying Curves and Tangent Lines, to pass through Given Points.*** By J. S. Van De Graaff.

(Concluded from No. 31, p. 483.)

Example 2. Let A R represent the curve of a graded roadway, and suppose A Q to be an approximate curve, traced 10 chains, of




100 feet each, with a modulus of curvature of 2° 45′. From the extremity at Q, suppose a normal line Q P to be measured 40 feet to the centre of the roadway at P. It is proposed to show a method of ascertaining the modulus of curvature which will trace the curve A R.

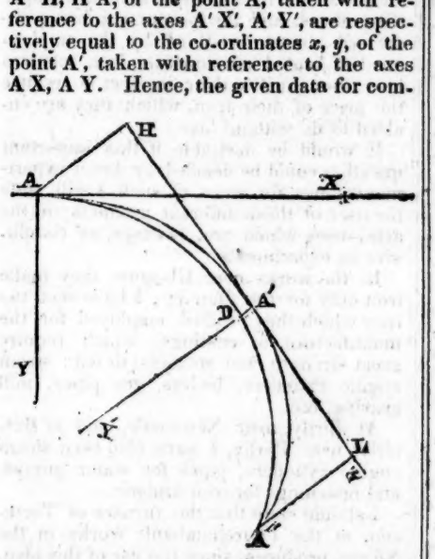
In order to obtain an approximate value for the new modulus of curvature by means of (XXXIX.), the given data are, $T = 2° 45'$, $n = 10$, and $w = \cdot 4$; that is, $T' = 2° 45' + \frac{\cdot 4}{\cdot 0175 \times 100} = 2° 45' + \frac{\cdot 4}{1 \cdot 75} = 2° 45' + \cdot 229° = 2° 45' + 13\frac{3}{4}' = 2° 58\frac{3}{4}'$. Now, if a new curve were to be commenced at the origin A, and traced agreeably to the modulus of curvature $2° 58\frac{3}{4}'$, it would not touch the point P by a deviation of about 3 feet, as an accurate calculation will show, and a variation of even 6 inches from the true centre of a graded surface is frequently a matter of some consequence. If a small error be made in the modulus of curvature at the commencement of a curve, it is not a proper remedy, after the line begins to deviate a material quantity from the true centre, to make a new change of curvature merely to correct the former error; for such a method of operation not only shows a great want of skill, but it also multiplies the difficulties when the road at any future time may want adjustment. When, therefore, the approximate result, $2° 58\frac{3}{4}'$, has been obtained, the next thing required to be done, by means of an instrument placed at Q, is to ascertain the true position of a point S, where the extremity of the 10th chain in the new curve would be situated, without actually tracing that curve upon the ground. The length and position of the line Q S may be correctly computed by means of (XXIII.), and (XXIV.); and then having measured the amount of error S R, to the centre of the roadway, the modulus of curvature required may be determined by means of (XXXIX.) For the given data will then be $T = 2° 58\frac{3}{4}'$, $n = 10$, and $w =$ measured distance S R.

It will be here easily observed that there are two sources of error in the first result obtained from (XXXIX.) The greatest part of this error arises from the want of coincidence in the directions of the lines Q P and Q S; for an accurate calculation will show that in the present example, a difference of $13\frac{3}{4}'$ in the moduli of curvatures corresponds accurately with a distance of 39 feet between the two extremities of the curves, which agrees with the distance

supposed in the first calculation, within one foot. But owing to the obliquity of the line Q S, a new curve laid from the origin A, agreeably to the modulus of curvature 2° 58¾′, would intersect the line Q P at about 37 feet from the point Q, and therefore pass 3 feet from the true centre of the roadway.

Example 3. Suppose A A′ and A′ A″ to represent two different curves, connected together upon a common tangent at the point A′, and selected in the field by tracing systems of rectangular lines agreeably to the method of co-ordinate axes as explained in art. 17; and let the *numerical values* of all the quantities remain as in the example given for that article. Now, in the place of these two curves, it is proposed to lay one continuous curvature from A to A″, if the ground about the intermediate point A′ will permit such an alteration; and it is therefore required to know how far the new proposed curve A D A″ would pass from the point A′.

It is very evident that the co-ordinates A″ H, H A, of the point A, taken with reference to the axes A′ X′, A′ Y′, are respectively equal to the co-ordinates $x$, $y$, of the point A′, taken with reference to the axes A X, A Y. Hence, the given data for com-




puting the modulus of curvature of the proposed curve A D A″, by means of (XXII.), are the following: $\propto$ = A′ H = 20·21 chains, $\beta$ = — H A = — 12·47 chains, $x$ 17·18 chains, $y$ = 10·24 chains, and $z$ = — 63° 20′. Therefore, Sin. T′ = $\frac{-2{\cdot}23 \times \text{Cos. } 63° 20' + 37{\cdot}39 \times \text{Sin. } 63° 20'}{-2{\cdot}23|^2 + 37{\cdot}39|^2}$ = $\frac{32{\cdot}412}{1403}$ = ·02310; or, T′ = 1° 20′ = modulus of curvature which would trace the continuous curve A D A″.

The data for computing the distance A′ D, by means of (XXXVIII.), will now be, $n$ = 25, T = 1° 16′, and T′ = 1° 20′; that is, $w$ = ·0175 × 625 × $\frac{4}{60}$ = 0·75 = the required distance A′ D nearly, expressed in chains.

30. When two curves, having their respective moduli of curvatures represented in degrees by T and T′, are laid from different origins upon the same tangent line, let $\propto$ denote the number of chains between the origins. If, then, the curve T be continued $n$ chains, and the curve T′ be supposed to contain $n \pm \propto$ chains, it is evident that the following formula will obtain for a reason similar to that in the preceding article, the quantity $w$ denoting the same line as before:

$$w = qn^2 \text{T} - q \cdot \overline{n \pm \propto}|^2 \cdot \text{T}'. \quad \text{(XL.)}$$

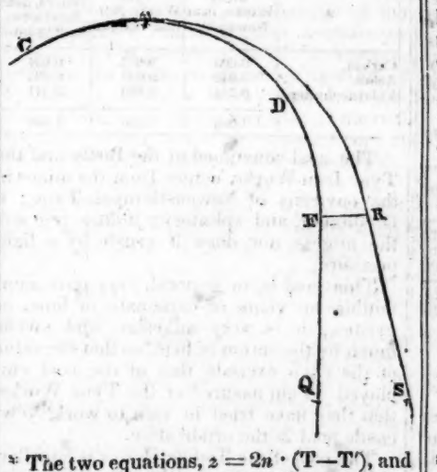
The expression thus obtained will be frequently useful in the field when *short curves* only are under consideration; and if it be supposed that $w = 0$, a formula may obviously be easily deduced which will correspond to (XIX.) by an approximation. For then $n^2\text{T} = \overline{n \pm \propto}|^2 \cdot \text{T}'$; that is,

$$\text{T}' = \text{T} \times \left|\frac{n}{n \pm \propto}\right|^2. \quad \text{(XLI.)}$$

This expression is remarkably simple, and will be very convenient for short curves.

31. Let C A D F represent a given curve, whose modulus of curvature is denoted in degrees by T, and let it pass into a tangent F Q at any given station F. Let also F R represent any small distance immediately on the right or left of the station F, and R S a straight line, whose inclination to the line F Q is denoted by a given quantity $z$°. It is then proposed to determine a point A in the given curve C A D F, and the requisite change of curvature at A, in order to lay the curve A D F into the position A R, and the tangent F Q into the position R S.

Take $w$ to represent the small given distance F R, and let $n$ denote the required number of chains from A to F, and T′ the required modulus of curvature of the new curve A R.



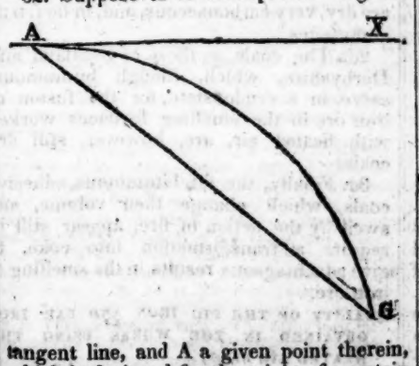

* The two equations, $z = 2n \cdot (\text{T}-\text{T}')$, and $w = qn^2 \cdot (\text{T}-\text{T}')$, are furnished by means of (V.) and (XXXVIII.) respectively; and therefore, by eliminating $n$ and T—T′, the following expressions will result:]

$$n = \frac{2w}{qz}$$

$$\text{T}-\text{T}' = \frac{qz^2}{4w} \quad \text{(XLII.)}$$

These formulas will be very convenient in the field when two short curves in reversion are to be connected by means of an intervening tangent common to both curves.

32. Suppose A X to represent a given




tangent line, and A a given point therein, which is designed for the origin of a certain required curve to be laid passing through a given point G. Suppose, also, that the point G is visible from the origin A, and that the approximate distance A G is known. It is then proposed to find the necessary modulus of curvature, in order to trace the required curve A G.

By means of an instrument placed at the origin A, let the angle X A G be measured, and let its value be denoted by D′. It evidently appears from (II.) that the angle D′ will contain the modulus of curvature as often as the curve A G contains chains. Hence,

$$\text{T} = \frac{\text{D}'}{n} \quad \text{(XLIII.)}$$

The expression thus obtained is extremely simple, and for short curves will be highly useful in the field.

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HEAT.—For a long time, philosophers have supposed that meteoric iron is made hot while traversing the atmosphere. A curious experiment was resorted to by M. Bierley, a foreigner, within a few months, which may possibly be of some service to those engaged in similar pursuits. A bar of iron, heated to whiteness, was held against a strong current of air from the blowing apparatus of a forge. Singular as it may seem, the bar, instead of cooling, burned very brilliantly, throwing off scintillations in every direction. The temperature rather increased than diminished. This experiment makes it very certain that a metallic mass, whirled through the upper regions of the air, would become extremely hot and eventually sparkle, as many meteors do just before they fall.—[Scientific Tracts.]

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*Report to the Board of Directors of Bridges, Public Roads, and Mines, upon the Use of Heated Air in the Iron Works of Scotland and England.* By M. DUFRENOY, *Engineer of Mines. Paris*, 1834.

(Continued.)

REMARKS UPON THE NATURE OF THE COAL EMPLOYED IN THE FURNACES USING CRUDE COAL.

It results from the preceding description, that certain coals, those of Wales, are employed in their natural state, for the fusion of iron ore in the smelting furnaces in which combustion is sustained by cold air.

That a great number of others — the coals of Glasgow, for example—are also susceptible of being used in the crude state, when the hot blast is employed; but that, for some varieties, the transformation into coke appears still to be indispensable, whatever be the plan on which the iron is made. To appreciate the causes which produce these remarkable differences in the properties of these coals, I have collected samples of most of those employed in the works spoken of in this report, which M. Berthier has analyzed in the laboratory of the School of Mines, and the results of which he has communicated.

*Coal employed in the crude state in the Welsh Iron Works. Cold Blast.*

| | Dowlais. | Cyfartha. | Pen-y-daran. |
|---|---|---|---|
| Carbon, | 0.795 | 0.784 | 0.768 |
| Ashes, | 0.030 | 0.028 | 0.032 |
| Volatile matters, | 0.175 | 0.188 | 0.200 |
| | 1.000 | 1.000 | 1.000 |

The coal of Dowlais is lamellar, separating across the layers in smooth and brilliant plates. This coal is composed of two distinct parts, one brilliant, dividing into

small cubic fragments; the other, completely hard, fracture conchoidal, is nearly analogous to the Cannel coal.

These two varieties do not blend, but form in each strata small beds of greater or less thickness; the brilliant part greatly predominates. The Dowlais does not soil the fingers; it swells very little in coking, and does not cake; the ashes are perfectly white.

The *coal of Cyfartha* is rather slaty, or lamellar, but is composed, as the preceding, of the union of the brilliant and compact black parts, intimately mixed, like the quartz and feldspar crystals in granite.

These two varieties of coal act very differently; that having a brilliant fracture swells and cakes sufficiently, whilst the dull kind is dry, and does not change by exposure to the fire. It is probably this mixture that gives to the coal employed at the Cyfartha works the property of resisting more than any other the action of the blast, and the different movements which take place in the furnace; its friability is also due to this circumstance; but the bitumen, which exists in sufficient abundance in the shining coal, cements the different parts of this coal, and gives it a great solidity after having been exposed to the fire.

The *coal of Pen-y-danau* has the same properties as the preceding, except that the mixture of the two kinds is less intimate. These three coals, belonging to the coal basin of Wales, are very dry, and owe this property to the excess of carbon which they contain; they are analogous to the coal of Rolduc.

*Coals employed in a crude state in Furnaces worked with Heated Air.*

| | Environs of Glasgow. | | | Staffordshire. | Derbyshire | |
|---|---|---|---|---|---|---|
| | Clyde. | Calder. | Monkland. | Tipton near Wed'y | Butterly. | Codnor Park |
| Carbon, | 0.644 | 0.510 | 0.562 | 0 675 | 0.570 | 0.515 |
| Ashes, | 0.046 | 0.040 | 0.014 | 0.027 | 0.030 | 0.030 |
| Volatile matters, Water, | 0.005 | 0.039 | 0.115 | | | |
| Gas, | 0.139 | 0.081 | 0.094 | 0.300 | 0.400 | 0.455 |
| Tar, | 0.166 | 0.330 | 0.215 | | | |
| | 1.000 | 1.000 | 1.000 | 1 000 | 1.000 | 1.000 |

The *coal of the environs of Glasgow*, employed in the Clyde, the Calder, and the Monkland works, present characters sufficiently marked, and of a composition very analogous, as seen by the preceding table.

This coal is usually dull, a little compact, hard, and does not crumble between the fingers; it presents, in its transverse fracture, a series of small lines, which gives a slaty appearance, though it does not, in reality, possess this quality. It is very well stratified, and the lumps cleave in flat fragments, of greater or less thickness: the surfaces of separation are almost always marked by black carbonaceous matter, which soils the fingers, and resembles charcoal in its fibrous appearance and dull color.

This coal is often traversed by extremely thin fillets of carbonate of lime, the direction of which is perpendicular to the layers, and sometimes pyrites is found.

The pieces of Glasgow coal submitted to analysis, softened but slightly; they cement together without change of form.

The *coal of Tipton*, which supplies the works of Lloyd & Forster, near Wednesbury, is slaty; it is composed of small beds, a few lines in thickness, separated almost always by an extremely thin bed of black carbonaceous matter, like charcoal. This substance is so abundant, that a piece of coal is rarely found at Tipton more than four inches thick, which does not present one or two layers of this friable material. This coal, shining in its fracture, divides into small pseudoregular fragments; it is slightly tenacious, and swells but little in coking.

The *coals in the environs of Derby* are divided into two principal qualities, designated under the names of *Cherry coal*, and *Soft coal*; the first, which is the harder, resists the action of the fire better than the second. The furnaces of Butterly, which use heated air, consume the Cherry coal exclusively; this coal is slaty, and presents lines of dull black, which gives it a strong resemblance to the coals of Scotland.

The soft coals, employed principally for steam engines and puddling furnaces, are used also, at Codnor Park, for the roasting of ores. This coal is shining, slaty, and separates in pieces by very light pressure; it contains some thin portions of black and friable carbonaceous matter, already alluded to.

Notwithstanding the considerable loss which these two coals sustain by coking, they scarcely change their form; they swell and cake slightly, and their ashes are perfectly white.

*Coals that appear to require transformation into Coke, when employed even in Furnaces worked with Heated Air.*

| | Birtly Works, near Newcastle. | Tyne Works, Northumberland | Apdale Works, near Newcastle, Staff'dshire. |
|---|---|---|---|
| Carbon, | 0.605 | 0.675 | 0.624 |
| Ashes, | 0.040 | 0 025 | 0 035 |
| Volatile matters, | 0.355 | 0.300 | 0.341 |
| | 1 000 | 1.000 | 1 000 |

The coal consumed at the Birtly and the Tyne Iron Works comes from the mines in the environs of Newcastle-upon-Tyne; it is shining, and splintery; it does not soil the fingers, nor does it crush by a light pressure.

This coal is, in general, very pure, containing no veins of carbonate of lime, or pyrites; it is very adhesive, and swells much by the action of heat, so that the value of the coke exceeds that of the coal employed. I am assured at the Tyne Works, that they have tried in vain to work Newcastle coal in the crude state.

The coal of the *Apdale Works* is lamellar, shining and splintering in the direction of the strata; it divides into small quadrangular fragments; in the cross fracture, it presents large bands, perfectly smooth, and very brilliant. This is owing to the super position of small layers, of which the nature is a little different; this coal is very adhesive, swells in the fire, and gives a light, silvery, but very solid, coke.

If we compare the composition of the different coals that we have examined, we perceive—

1st. That the coals employed in a crude state, in the furnaces worked with cold air, are dry, very carbonaceous, and, in fact, true anthracites.

2d. The coals, as those of Scotland and Derbyshire, which, though bituminous, serve, in a crude state, for the fusion of iron ore in the smelting furnaces worked with heated air, are, however, still dry coals.

3d. Finally, the fat, bituminous, adhesive coals, which change their volume, and swell by the action of fire, appear still to require a transformation into coke, to give advantageous results in the smelting of iron ore.

QUALITY OF THE PIG IRON AND BAR IRON OBTAINED IN THE WORKS USING THE HEATED AIR BLAST.

The iron for castings in Scotland bears a less commercial value than that of Staffordshire. The first were quoted in the Liverpool market, in the month of July (1833) last, at 4*l.* 15*s.* sterling per ton, whilst the Staffordshire iron sold, at the same time, for 6*l.*

The difference between the price of these kinds, together with the prejudice generally entertained that the hot blast is unfit for the manufacture of iron, led some to doubt the advantages to be derived from the new method. The numerous observations I have made, tend, on the contrary, to prove that, for cast iron, at least, the products of the furnace working with heated air are superior to those of the cold blast. The less value of the Scotch iron is no evidence against this opinion. In fact, the Staffordshire iron has always been regarded as the most suitable for castings, and has always borne a higher price than that from most of the other parts of Great Britain; perhaps, also, the great difference in price between the Scotch and Staffordshire irons may be accounted for by commercial circumstances, for the Scotch now make iron much cheaper than others, and the production being increased almost one-third, by the employment of heated air alone, the iron masters have thought it to their interest to reduce the price of their iron, which they are enabled to do without loss.

It would be desirable if this important question could be decided by direct experiments; but for want of such, I will state the uses of these different products in the arts—uses which are, perhaps, as conclusive as experiments.

In the works near Glasgow, they make iron only for the foundry; I have seen the iron which they produce employed for the manufacture of castings, which require great strength and softness, to wit: steam engine cylinders, boilers, gas pipes, mill gearing, &c.

At Birtly, near Newcastle, and at Butterly, near Derby, I have also seen steam engine cylinders, pipes for water pumps, and fastenings for iron bridges.

I should state that the furnace of Torteron, at the Fourchambault works, in the Nievre, produces, since the use of this plan, gray iron, which competes in the market with that from England.

The iron manufactured from hot blast pigs is also of very good quality.

At Codnor Park, near Derby, this iron is employed in the constitution of different parts of the steam engine, of chains for suspension bridges, and of straps and cross-bars in iron bridges.

The iron produced at the Tyne works is wrought into sheets, for steam boilers, gasometers, &c.

At Wednesbury, the iron is also of good quality, and serves for purposes which require great strength.

These different examples prove that, by means of the hot blast plan, as well as by the old mode, superior metal can be made for foundry purposes, and which is well adapted for conversion into wrought iron; but it must not be thought that, by means of this plan, the faults which result from the nature of the ore, or coal, can be corrected.

PROBABLE CAUSES OF THE INCREASE OF HEAT, DUE TO THE USE OF HEATED AIR.

I have remarked several times, in the course of this report, that the temperature of the furnaces worked with heated air appears to be higher than in those where combustion is sustained by the use of cold air; all the indications which are usually considered as guides for the working of the furnace unite in proving this assertion.

The scoria does not attach itself above the tuyeres; the color of the fire, in this part of the furnace, is so white as to be injurious to the eyes; the scorias, which are very liquid, flow with facility; the metal being hotter, can be cast directly into the most delicate objects. The quantity of ore in each charge is augmented in a great proportion, whilst the quantity of flux is decreased. This diminution in the proportion of melting is, of itself, the strongest proof of the increased temperature of the furnace; it indicates to us that the earthy matters find sufficient heat to fuse with a small addition of flux.

Probably it is to this excess of temperature that we should attribute the faculty of employing certain coals in a crude state, the transformation of which into coke appeared indispensable, at a less elevation of temperature.

In spite of these certain proofs of the increased temperature by the introduction of hot air into the furnaces, we cannot demonstrate its existence in a positive manner; but it appears to me that, to a certain point, a reason for this phenomenon may be given, by comparing that which passes in the furnace, by the constant introduction of air, to that which takes place by the mixture of two liquors of different temperatures, which we know will produce a mean temperature. The comparisons which I establish appear to me to be just, though the furnaces are in circumstances very different from the liquids having a given temperature, because the heat is reproduced without intermixture, by the combination of carbon and oxygen.

By admitting this cause of the augmentation of heat, it might be supposed to be very slight; on account of the great difference which exists between the temperature of the furnace, and that of the air which sustains the combustion; a difference that we have no accurate means of appreciating. I will show hereafter that this cause is not so feeble as might at first be supposed.

There is, I believe, another much more powerful cause, which it is impossible to estimate; it results from combinations, which could not be produced at the ordinary temperature of the furnace, and which are developed by the augmentation of heat due to the substitution of hot for cold air.

We see constantly, in our laboratories, examples of this phenomenon; substances which are acted upon slowly, and with much difficulty, by acids, at the temperature of the atmosphere, dissolved with facility when the liquor is slightly heated, and the combination formed often becomes itself a powerful source of heat. The operation of the smelting furnaces presents to us, perhaps, similar circumstances. The bitumen, and certain gases, which cannot burn at the temperature of the furnace using cold air, becomes ignited by the feeble augmentation of heat produced by the introduction of heated air; and the little smoke which passes out from the tunnel head when crude coal is consumed, and also the color of the flame, authorizes the belief that the bitumen, the hydrogen gas, &c., are almost wholly consumed.

This supposition naturally answers the objection that may be made, that, even admitting a certain augmentation of temperature by the introduction of heated air, there can be no diminution in the quantity of fuel consumed, because the diminished amount of fuel used in the furnace is compensated for by that required to heat the air.

We have stated that the quantity of air injected into the furnace could, by its great mass, have the power of cooling it to a considerable degree.

This mass of air was raised in the Scotch works, before the adoption of the hot air plan, to 2800 cubic feet per minute, weighing 214¼ pounds. The quantity of air injected in each day, therefore, may be estimated at about 140 tons.

The total amount of coal, mineral, and flux, does not exceed thirty-four tons; the weight of air, therefore, injected into the furnace, is more than four times that of the solid materials used in the same time.

We may conceive, therefore, that so considerable a mass, of which only a fifth part sustains combustion, thrown into the furnace at the mean temperature of the atmosphere, will produce a much greater refrigeration than when raised to the temperature of more than 600 degrees.

A circumstance which still tends to diminish, in a great degree, the refrigerating power of the air, by the use of the new plan, is, that the quantity of air is much less. In the furnaces of Scotland that we have taken for example, the quantity is reduced from 2800 cubic feet, to 2100 per minute, or twenty-five per cent.*

We can calculate the influence of the introduction of air upon the heat developed each instant, by the combustion of carbon; but it appears impossible to appreciate the augmentation which results from new combinations, caused by the combustion of the bitumen and carburetted gases, because we cannot, in the present state of the science, estimate the temperature in the interior of the furnace; the few observations that precede, though not giving any idea of the real influence of the heated air, appear to me, at least, to establish that it is very considerable.

RECAPITULATION.

The details into which I have entered upon the greater part of the works using heated air, have, perhaps, prevented the reader from seizing the principal circumstances of the plan; I deem it, therefore, useful to recapitulate briefly—

I. In all the works, with the exception of one or two, its introduction has resulted in an increase of the products, an economy in the consumption of fuel, and of flux, as well as in the expense of labor, and incidentals.

II. These advantages have followed in the same progressive ratio as the temperature to which the air has been heated.

III. The production of metal has generally increased.

IV. The quantity of combustible matters burnt in the furnaces appears to be nearly the same where the heated air is used, as before with cold air; the daily consumption at the Clyde being eighteen tons of coke, to obtain six tons of metal; now it is eighteen tons of coal, to produce nine tons of metal.

V. The metal produced in the furnaces worked with heated air is generally gray, and fit for the foundry; nevertheless, this plan is employed with advantage in the works of which the pig iron is all, or in part, manufactured into bar iron, (Codnor Park, Tyne, Wednesbury, &c.) It is only necessary, for this purpose, to change the proportions of ore and fuel.

VI. In many works, the combustion requires much less heated, than it did cold, air; at the Clyde, for example, the same blast engine which served with difficulty for three furnaces, now blows four. The economy in motive force is not proportional to the diminished quantity of the blast, because a certain power is required to overcome the friction of the air in the heating apparatus, and the resistance which results from the expansion of the air by the heat. This last inconvenience is remedied by increasing the size of the tuyeres, their diameter having been increased from two and a half to three inches; the increased diameter of the tuyeres is also necessary to diminish the velocity of the current of air, when introduced into the furnace.

VII. When, as at Torteron, a diminution in the quantity of air does not result from increasing the temperature, additional power is required to move the blowing machine.

VIII. The substitution of heated for cold air, in the fusion of iron ore, is marked almost immediately by a change in the nature of the metal, which becomes more carbonized; the charges descend more slowly, but the working is accelerated by augmenting the proportion of ore.

Relative to the Apparatus:

IX. The apparatus formed by joining pipes of large diameter, which receive the air, and of small pipes, in which it is heated, and dilated, appears to me to be preferable to that composed of a series of pipes, of great diameter; requiring a smaller space, being less costly in the construction, and consuming less fuel than the last named; besides, the temperature is not uniform in all parts of this apparatus, and a current is usually formed in the centre, of diminished temperature.

X. To diminish, as much as possible, the velocity of the air submitted to the action of the heat, and to avoid the resistance due to its expansion, it is necessary that the surface of the small pipes should be more extended than that of the large pipe which receives the air from the blowing machine.

XI. The interior capacity of the small tubes ought to be greater than the volume of air injected into the furnace; by this disposition, the air remains a longer time exposed to the action of heat, and acquires a more elevated temperature.

XII. From this last condition, the apparatus placed on the trunnel head appears to be of but little advantage to furnaces using coal; sufficient size cannot be given to it, to enable the air to remain long enough; to remedy this evil, the air is made to pass over another fire placed near the tuyere.

Relative to the Fuel:

XIII. The coals, very rich in coke, which are dry, and resemble anthracite, can be employed in a crude state, in furnaces working even with cold air.

XIV. The coals which contain a large proportion of volatile matters, (30 to 35 per 100,) but which are not very adhesive, and do not change form during combustion, serve, without being carbonized, to work in furnaces using air heated to 300° Cent.

XV. It appears, finally, that fat and bituminous coals, like those of Newcastle, which are fit for the fusion of iron, must, even with the hot blast, be transformed into coke.

* The specific heat of water being represented by 1.0000, that of the atmospheric air is 0.2669, from which it results that a gramme of air at 322° Cent., (612° Fah.) the temperature at which the air is injected into the Clyde furnace, would raise 0.733 gms of water to 100°, (212° F.) supposing the air reduced to 10°, (60°;) and as the quantity of air introduced each minute is 124,770 gms., the heat which results from this mass is represented by 01,463 gms. of water, raised to 100°.

The charges at the Clyde works are now 34.416 kilogrammes of coal in twenty-four hours, or 23.00 kil. per minute, which, after deducting the waste by ashes, water, and gas, which escapes without being burnt, may be taken at a maximum of 20.30 kil.; the complete combustion of this quantity of coal would raise, in each minute, 1,465 kil. of water, from 0 to 100° centigrade; the increase of temperature which results from the temperature of the air at 322° cent., compared with that produced by the combustion of coal, would be as 92 to 1465, or one-sixteenth. This is the least ratio, the quantity of oxygen being insufficient to transform all the carbon into carbonic acid.

[From the Journal of the Franklin Institute.]

REMARKS ON COMPETITION PLANS FOR BUILDINGS.—Every person, whose attention has been in the least degree directed to architecture, must have observed that, in the present day, the practice of procuring plans for buildings, by public competition, is becoming more and more prevalent. It is, perhaps, only of late years that this custom has been generally acted upon; and it is more commonly employed in the case of public buildings than in those of a private nature. When a public building is about to be erected, the parties advertise a description of what is wanted, offering, generally, a premium for the best plan, or for that which shall be finally adopted. Sometimes the successful competitors have nothing for their reward but that of being employed to conduct the work, for which they are paid as in ordinary cases. The plans submitted are, or should be, distinguished by a private mark, referring to a sealed letter sent by the competitor, in which his real address is to be found; and it not unfrequently happens that there will be from forty to fifty of such plans sent in, varying, of course, in equally numerous degrees of merit. Not a few of these drawings are the result of great labor, seldom occupying the time of the competitor for less than three weeks, and, if the building be very extensive, and the design well matured, having employed his sole attention for months together. The unsuccessful competitor, consequently, sustains a very serious loss; as he is not like the landscape or figure painter, who can carry his drawings to the market; the plans of the architect can be of no use but for the purpose for which they were originally intended. In fact, there cannot be, in any other profession, a competition which requires such a sacrifice on the part of the competitor, as in architecture; and, were this sufficiently impressed on the public mind, there can be no doubt but the labors of the architect would, in all such cases, be more duly appreciated, and, at least, rewarded with an impartial distribution of justice.

It may here be remarked, that sufficient time is seldom allowed by the advertisers for preparing the plans; for it will be confessed by every architect, that the faults of his composition will be easier detected by himself, after it has been laid aside for a time; we should say, therefore, that six months, at least, should be given, or even a longer period, according as the subject may require.

Although the system of competition in architecture is accompanied with no small expense to the parites competing, yet it cannot be denied that, when rightly conducted, it is conducive to the greatest advantages to the public, and is the only true method of eliciting the brightest talents of the country, especially when the premium held out is of sufficient value to induce proficient architects to come forward with their works; and, surely, the erection of a building which is destined to continue for ages, standing forth to prosterity as an example of the architectural genius of our time, is not unworthy of the most assiduous attention. The practice has also a beneficial effect, in affording to a young architect facilities, which he could not otherwise possess, of pushing himself forward. Private competition plans are sometimes required, where the competitors are previously chosen out, and where all are paid a certain amount for their trouble, whether successful or not; this is certainly the most liberal method, and should be adopted where the funds are sufficient.

In most cases where a decision is made on competition plans, the judges consist of men who are but indifferently qualified for the task, and whose fancy is easily carried away by a gaudy picture, the intrinsic merits of which they are incapable of appreciating; or, perhaps, by a design which has nothing else to recommend it but that of being so common-place in its character, as to be more familiar to their ideas than one of higher pretensions. Indeed, it is not to be supposed that men, whose pursuits of life are so totally unconnected with the subject, as never even to have led them to the inspection of a simple plan of a house, should be able to form a correct judgment of a number of elaborate drawings. It often happens, indeed, that the judges are so bewildered with the brilliant display before them, that they readily give way to some almost equally ignorant but pretending builder, to whom they look up as to the architectural oracle of their body, and who, it may be supposed, will not let slip such an opportunity of serving his own ends. This may, perhaps, be thought rather an uncharitable conclusion; but, certainly, there is but too much reason to fear that sinister influences have, in many cases, had an undue weight, and it is the particular object of this article to point out these grievances.

On such occasions as that we are just referring to, the most obvious method of proceeding, and that which would be the most entirely free from all suspicion of partiality, would be to name two or more architects, of acknowledged celebrity in their profession, (and residing at a distance,) to whom the plans should be sent for final decision. Care should also be taken by all judges, in forming their decision, to keep in mind the terms of the competition; for, although the value or cost of the building required by the advertisement be strictly attended to by some competitors, yet there are others who will disregard it, and will produce an elegant design, although its expense should be double the stipulated estimate, and who, by this trick, may blind the judgment of the umpires, and carry off the prize.

The undue means which are sometimes resorted to by competitors to forward their own cause, are disgraceful in the extreme: some have been known openly to carry about their designs, for the purpose of procuring votes, before the general election: some unfairly attach their names to their plans, (instead of using a private mark, as they ought to do,) in the hope that their friends may exert undue influence in their favor, or form a vain confidence in their own importance, which leads them to expect that the name alone will produce a favorable impression; and some have even been known surreptitiously to withdraw their designs from the exhibition, in order to add improvements which have been suggested by the designs of another: nay, such is the total want of principle, and disregard of justice to the competitors, shown in some cases, that an instance could be brought forward where one of the competitors was appointed the judge! This competitor judge most naturally gave his decision in favor of his own designs, and the unsuccessful competitors were dismissed with the most cogent and satisfactory argument, that "the judge was a man of such respectability, that he would not have chosen his own design, unless he had considered it the best!" Is it possible to conceive that language could be so sophisticated as to apologise for such conduct! Thus it is that nine out of ten competitions are decided, and thus are the architects treated who have spent a large portion of their valuable time for the benefit of the public. It must be acknowledged, however, that isolated cases occur, though few and far between, where no complaints of this nature can be made, and where fair play has been allowed to have had full scope. The Tron Church steeple, Edinburgh, erected, in 1828, by the architects Messrs. R. and R. Dickson, may be mentioned as an instance of fair competition; the choice of the plan reflects the highest credit upon the then magistrates of the city, who made their election from a great number of designs. Considering its cost, this steeple, for aptness, originality, and picturesque beauty, can scarcely be surpassed in any country. It would not be easy to cite many instances of the same kind in Scotland, but we may mention another, viz.: Burns' monument at Ayr, by Thomas Hamilton, Esq., of Edinburgh. This is an exquisite gem of Grecian architecture, of which school its tasteful architect is a distinguished disciple. Finally, it is evident that the grievance here complained of, and which calls so loudly for redress, is in no way amenable to the civil law, unless in such a case as we have before hinted at, viz.: where the judges do not abide by the advertised terms of the competition. Even in such cases, we are not sure how far they lay themselves open to have their proceedings legally called in question, so that an appeal can only be made to the moral rectitude of society; and we have no doubt that the evil only requires to be fairly exposed, to be, in time, totally eradicated.

Edinburgh, October, 1834.

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OBITUARY.—The Orang Outang, or wild man of the woods, which has lately attracted such crowds at Peale's Museum, died on Saturday at 12 M. after an illness of one week. In order to ascertain the cause of his death, a *post mortem* examination was held in the Lecture Room of the museum.—[Transcript.]

On Friday night, the tiger in the menagerie in Sixth-street, Philadelphia, contrived to escape from his cage, and having a good appetite, he beset the little Shetland pony that belonged to the same concern. Having despatched the horse, he turned to one of the men belonging to the establishment, and would have torn him to pieces but for the timely interposition of some of the attendants. The beast was killed and the man saved.—[Transcript.]

[*From the Cincinnati Gazette of 11th inst.*]

ANOTHER STEAMBOAT ACCIDENT.—The *Hero*, Capt. Page, struck a snag near Sandy, on Tuesday last, and immediately sunk to the hurricane deck. She had a heavy load of dry goods on board, principally for this city and Louisville. The Hero had laid by for fog, which had partially cleared off when she put out; but it suddenly became so dense, as to obscure the shore, and the nearest objects. Her passengers were brought down by the Huntress. No loss of life, or any serious injury, except to the boat and cargo. The boat can be raised again, when the waterfalls a few feet.

EXPLOSION.—On Thursday, 9th inst. at 9 o'clock in the forenoon, an explosion took place in one of the graining mills in the powder factory of D. Rogers, Esq. near Newburg. The mill had not been in operation for more than a week previous to the time of the accident, which can in no feasible manner be accounted for. There were, fortunately, only two persons in the building, who were both killed, viz: Henry Glessing, a young unmarried man, and John Sutherland, a married man, but without any other family. The former was thrown a considerable distance into the field adjoining, and bore but slight marks of external injury—the latter was dreadfully mangled. The explosion was heard at Fishkill, and for several miles around.—[Journal of Commerce.]

## AGRICULTURE, &c.

*On the advantages to be derived from the establishment of an Agricultural Professorship.*

To the Editor of the Farmer's Register:

Barboursville, July 23, 1835.

Sir,—It has been a settled conviction on my mind for years, that a professorship of agriculture—a pattern farm, and such a paper as yours, united therewith, would be productive of incalculable benefit to the commonwealth. The space of a letter is too confined to admit of one half being stated. Suffice it to say, it would elevate the science—add dignity to the pursuit—call off from encumbered vocations a portion of the mind of our citizens now lost to the community—present a rallying point for all the scattered information of the land—reduce to the test of experiment every theory plausible enough to justify it—by the same standard to prove the value of every discovery or improvement—promote economy by causing one experiment for many—a certain and rapid communication, through the State, of the results—furnish a sure means of ascertaining the nature of our climate—the quantity of rain falling in the year—the seasons when drought most generally prevails—and by consequence, furnish data to guide the husbandman in the cultivation of crops, both as to time and kind. But I must stop—for I find no end to the advantages that would result from such an establishment. Let me, however, add one more. All these things are to be done before the youth of Virginia—the future men of the commonwealth, destined eventually to influence her destiny. A portion of these, selected from every part of the state, (say one to each congressional or senatorial district,) of promise, but unable, from poverty, to educate themselves, to become the adopted children of the state, would be able by alternate labor and study, alike to keep up the farm, and to improve themselves. Indeed, it is worthy of the profoundest consideration, whether every student of the University would not profit by a few hours work daily, in the proper season. These being my views, I submit to you whether it does not behoove the tillers of the earth to make an effort to induce the legislature to attend to their neglected interests. How is this to be done? I answer, as every other sect effects every thing by conventions—to that alternative we must also resort. What say you to such a convention, to meet in Richmond the first Monday in January? Let any one who feels an interest in the object attend. Let each agricultural society in the State be represented there. If it be asked what good can come of it, the answer is, let us try it. A free communion of the intelligence of the land cannot be altogether unproductive of good fruit. Apart from what can be done by such a convention on its own means, an appeal may be made to the legislature under the weighty sanctions of their united wishes, to do something for us. If the view which I suggest is esteemed impracticable, they may incorporate an agricultural society in each congressional district, and award a small sum to each, to be distributed in premiums, after the manner of New-York and other states.

But it is objected that it will cost something. Have we not as a class offered our fleece annually, without a murmur, to be appropriated to other improvements? Is it unreasonable that in turn we should require a small portion of our own to be applied to our peculiar benefit? A small portion of the interest paid annually by the University, would in a few years put our scheme completely in operation, and I verily believe after that it would be able to support itself. However, all these things might be discussed in convention, and digested in a form that would be most acceptable. And I may be permitted to add, that for once we should have a convention whose sole object would be the good of the country—a spectacle so singular in these times, that it could not fail to be as consolatory as the oasis to the weary traveller of the desert.

If you agree with me on this point, you can greatly promote the object by inviting the meeting in your journal. If I thought my name would be of any service, you would be at liberty to use it with my remarks. But I fear not. However, do as you please. I have it much at heart to do something. Better heads than mine may suggest better plans, to which I will most cordially submit.

Accept assurances of my high consideration. JAMES BARBOUR.

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From the Farmer and Mechanic.]

TO DYE WOOLLENS.—Last September I was at the exhibition in Burlington, Kentucky, and was much pleased at the spirit shown by the ladies of that neighborhood, in manufacturing so many excellent articles of domestic manufacture for exhibition. For this they deserve great credit; but I observed that in many articles, particularly the carpeting, that though the spinning and weaving were well done, in most of them the coloring was deficient, which I attribute to their not having proper instruction in that branch of the business, and have therefore made out the following directions for dying, and I hope you will publish it for their benefit, viz:

Woollen yarn may be dyed yellow by boiling it for an hour with about one-sixth of its weight in alum, dissolved in a sufficient quantity of water, then plunging it, without being rinsed, in a bath previously prepared, by boiling black oak bark, (as ground for tanners,) in water; the yarn is to be boiled in this, and turned until it has acquired the wished-for shade; the oak bark should be strained out of the liquid. It would be of considerable advantage to add one ounce of cream of tartar to each pound of alum used. After the yarn is dyed it should be well washed in several changes of water.

Woollens may be dyed blue by dissolving one ounce of good indigo in four ounces of oil of vitriol (sulphuric acid.) This must be done in a glass or stone vessel, powdering the indigo before it is mixed with the vitriol; to the solution one ounce of dry pearl-ash is to be added. The yarn must be boiled in a sufficient quantity of water with one ounce of alum, and one ounce of cream tartar, to every six pounds of yarn; the boiling to continue at least one hour; it is then to be thrown, without rinsing, into a water bath containing a greater or smaller quantity of dissolved indigo, according to the shade wished for. In this bath it must be boiled, until it has acquired the color, and then washed.

Green can be dyed by adding as much of the dissolved indigo to the bark bath, prepared for yellow, as with the proper shade. The cloth having been boiled with alum and tartar, as directed for yellow, is to be put into the mixture, and the same method pursued as directed for dying that color. I would observe that there are many methods of dying blue, many of them practically known in the families of most farmers, and therefore will probably be preferred by them, but this method is most certain and most convenient for obtaining a fine green.

A good red may be obtained by boiling Nicaragua wood in water until the color is extracted, and then straining the liquor; the yarn having been prepared in alum water as previously directed, is to be boiled in it in the same manner as directed for other colors. Different shades may be produced by adding a little copperas.

Wool may be dyed black by the following method—first prepare a bath by boiling one pound of black oak bark, to every ten pounds of yarn, in a sufficient quantity of water. In this bath the wool is to be boiled for two hours, it is to be put into a bath composed of three-fourths of a pound of copperas, and two pounds of logwood, for every ten pounds of yarn, and a sufficient quantity of water; in this it must be kept for two hours more, at a scalding heat, frequently taking it out and exposing it to the air during the operation.

A MECHANIC.

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[From the Southern Agriculturist.]

RARE AND VALUABLE SEEDS AND STINGLESS BEES.—We introduce to our readers the promised letter of Henry Perrine, Esq., Consul at Campeche. It will be remembered that in our last number, we acknowledged the receipt from this gentleman, of a hive of stingless Bees; they have been committed to the care of one, whose public spirit will cause him to regard himself as the husbandman of the community in which he lives; he will second the patriotic efforts of the Consul at Campeche, in conferring upon us a gift so interesting. This has not been the first evidence of the liberal interest felt by Mr. Perrine, in promoting the introduction of valuable products from abroad; and if our motives were purely selfish, we still might very consistently wish, what we now offer in pure thankfulness, a renewal of his health, and of his public office in some other quarter of the globe.

"Consulate U. S. A.
Campeche, June 18th, 1835.

To the Editor of the Southern Agriculturist:

Sir,—Although on the eve of my return to the United States, yet as the schooner

Carolina Brutus, now returning to Charleston, is the only vessel which, during eight years, has afforded a direct communication between this port and yours, I avail myself of the few minutes allowed me to send you a few products of this peninsula.

I name first, a paper of the beans, which produce the root here, called Jicama (Dolichus bulboses?) as the success of Mr. Skinner, in Baltimore, justifies the belief that in your latitude it will flourish and become a valuable addition to your horticultural, or even agricultural resources. Next you will find a paper of the four-winged pods of another leguminous plant, which rapidly grows into very ornamental trees (Piscidia Campechana,) whose wood (here called Habi) is as highly prized for ship building in Campeche, as is the live oak in the United States, or the teak in the East Indies: and has the much greater merit than both, inasmuch as he who plants the seed may profitably cut the timber. I also send a small quantity of nankin colored, and of kidney shaped seed cotton, which will speak for themselves in a cotton growing country like South Carolina. Last, and greatest in my estimation, are the samples of the *foliaceous fibres* of Yucatan and of Goazacoalcos, (the coarse called Henequen, and the fine called Pita in the ports of Mexico) and of the leaves of the Agave, and of the Bromelia, from which they are extracted. Your own Elliot, in his Botany of South Carolina, long since anticipated the cultivable value of the foliaceous fibres of your indigenous Yucca filamentosa. I have not the time to give even an epitome of the relative advantages of the Agave Henequen and of the Bromelia Pita, for extensive cultivation in the most sterile districts of the south, the former in sunny plains and the latter in shady woods, where it absolutely usurps the place of the common worthless undergrowth. I still, however, persist in my conviction, that the production of foliaceous fibres in the most barren soils of the south, will be much more profitable than the cultivation of your present great staple of capsular fibres in the most fertile loams, and hope that during my travel after health this summer, I may take some active droselytes. By-the-bye, you must not mistake the present samples of the fibrous leaves to be good ones, as in truth, they are the refuse of a number collected two years ago, which have been tossed about in the dust.

While writing the above, an Indian has returned with the hive of stingless Bees, which I feared would not arrive in time for Captain Kerrison, who is hurrying me to conclude this unpremeditated epistle.

Very respectfullly, your ob't serv't,

HENRY PERRINE."

The seeds mentioned, we will distribute among our friends who wish to attempt their cultivation. The Piscidia Campechana, we presume is the same as P. Carthageniensis, a variety of the Jamaica Dogwood, the generic name is derived from its power to intoxicate fish. It is said that the fibres of our Yucca filamentosa, are the strongest of any known plant. It is familiarly known as the silk root with which woollens are washed, but is not applied by us to any other use. We should suppose that it must surrender its pretensions as a fibrous plant of value, to the Bromelia sent by Mr. Perrine. The specimen of this, at our office, is well worth examination, and is by far the most interesting of the plants he mentions. His description of the locality in which it delights, will at once bring to mind the extensive body of pine land in Georgia, which spreads from the sea shore over half of the State, now infested with endless tracts of stunted palmetto. How can this have escaped the attention of Mr. Spalding, of Sapello? His name is connected with the first culture of many of our staples, and this is a new opportunity of identifying him with the prosperity of Georgia.—[Ed. So. Agr.]

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THE CULTURE OF COTTON.—The following remarks are from a source which give them a title to consideration.—[Boston D. Adv.]

"The crop of cotton is turning out much larger than was expected, and will be quite equal to the consumption at present prices. There is no doubt it is very much short of what it would have been, had the season been propitious; nor can the reports of its disasters made by so many of the most eminent men in the country be rejected, from which we may infer that the progressive annual increase of cultivation was much greater than supposed, and that had the season been favorable, the quantity raised would have far exceeded the most extended estimates.

"The production of cotton has more than doubled every nine years since it became a staple of of the United States. In 1816, nearly all Alabama, Mississippi, and Arkansas, and many of the most fertile districts of Georgia, Louisiana, and Tennessee, were a wilderness, the hunting grounds of savages. Florida was a retarded Spanish colony, and the whole negro population in the lower valley of the Mississippi did not exceed sixty thousand. But such has been the unparalleled prosperity of the country, that the Indians have nearly all dispersed out of these regions, the terrors of emigration into the wilderness have vanished, settlements and civilization have extended over the country, canals, railroads, and other useful improvements are rapidly progressing, and banks and factors are ready to grant facilities to planters to extend their estates—which leads to the belief that the annual increase will be greater than ever it has been, particularly as there is an almost unlimited extent of suitable land, and the migration far greater than ever it was from the northern slave states into the fertile cotton districts, where the labor of the slave is so much more valuable than in the grain states, and as cotton at eight cents per pound is the most profitable agriculture in this or any other country.

To those unacquainted with the culture of cotton, it is worthy of remark, that it is the most certain crop planted. The harvest begins in August and ends in February, or when the land is ploughed for a new crop. The bounds of latitude are about 36 degrees; therefore, by far the greatest part of the globe affords a suitable climate. The last crop in the United States is considered by the most experienced planters the shortest return for the labor, of any since its cultivation became an object of this country. The bordering province of Texas has a large extent of the finest cotton lands in America; but as it belongs to the Mexican Republic, where slavery is only tolerated under the name of apprenticeship, the production of cotton there may not increase so fast as many anticipate. It has land capable of producing more cotton than is now raised in the whole United States. The exports last year were about 1000 bales—this year they will be about 3,500, next year they may exceed 8000 bales; and should the climate prove favorable, to white laborers engaging in agriculture, there is no doubt that indigent Germans and other laborious orders of the white race will emigrate and increase the population in a few years to an extent capable of raising a large quantity of this important article.

The Slave population of the United States, by the census of 1800, was 893,041. In 1810, 1,191,364. In 1820, 1,538,038. In 1830, 2,009,043 Slaves and 319,599 free Blacks; which shows they double in about twenty-five years; therefore, according to the ratio, the Slave population at this time is about 2,300,000; to which add the free blacks, and it shows the colored or African race in the United States to be equal to the whole population at the commencement of the Revolution, or nearly the same as the present population of Scotland.

Our statistical estimate shows about 1,100,000 Slaves residing in the Cotton districts, from which number we deduct one half for superannuated, juvenile, mechanics, house servants and others that do not work in the field, and it shows a force of 550,000 field hands engaged in raising Cotton, exclusive of a number of white persons and free negroes. The reduction of one half on the slave population is the usual allowance that statistical computators have made to ascertain the effective force of field hands; and as this data has been formed on the slave population in the older or Northern Slave States, where the habits and customs are more indulgent than in the new and more enterprising regions, it leads to the belief, that the proportion of field laborers in the new States is greater than in the old. We should add our statistical estimate, but the document is too voluminous for a commercial letter.

In the Atlantic States, North Alabama and Tennessee, 2 1-2 to 3 1-2 bales to the field hand is the the usual return. In Louisiana, Mississippi, and South Alabama, from 4 to 10 bales is the return—besides raising provisions; but in some situations, where the return of cotton is the greatest, some of planters find it more for their interest to purchase provisions than to raise them. The quantity of clean cotton made per annum, varies from 150 to 600 pounds, each hand cultivates about 10 acres.

In 1825, it was estimated that the number of slaves engaged in the cultivation of cotton, was 230,000 field hands. The export of 1825-6, was 710,000 bales, or more than double that of 1816-17. This year we estimate the force at 550,000 field hands, but the increase has been much the greatest in the most productive districts, which by the usual rate of return, would make a crop of over 1,800,000 bales.

Again, if we take the increase as doubling every nine years, it would give a crop for 1835-6, double that of 1826-7 (937,000 bales,) or over 1,800,000 bales, which nearly corresponds with the statistical estimates.

These views exhibit a surprising increase and a capability of producing to an extent few are aware of.

It takes at least two years to bring lands into crop. The highest prices of 1817-'18, exhilarated the production which came forward in 1821—that crop being over 40 per cent. more than the crop preceding it. The reduction of prices in 1819 deterred such rapid extension until the advance in 1824-'25, which gave an extraordinary stimulus to the cultivation, which caused the exports of 1827 to be near 33 1-3 per cent. more than the year preceding. The advance in price during the last three years, (and the facilities as noticed in the same paragraph,) would have no doubt showed a large increase this year, had it not been for the unparalleled injury done to the crops; and therefore taking the increase of the periods quoted as an example, it leads to the conclusion that this year the United States is capable of raising 1,800,000 bales, if the season should be propitious.

The growing crop is very promising, and the high prices have stimulated the cultivation so much beyond its usual progression, that should the season continue propitious, there will be a quantity raised far greater than almost any suppose. Those who hold high priced cotton, should consider that the new crop will be at hand in a few weeks, and that it may prove much larger than almost any contemplate, and that present prices may fall 50 per cent. without being as low as they had been when trade was good and stocks moderate.

NEW-YORK AMERICAN.

SEPTEMBER 19—25, 1835.

## LITERARY NOTICES.

AN EXPOSITION OF THE MYSTERIES OR RELIGIOUS DOGMAS AND CUSTOMS OF THE ANCIENT EGYPTIANS, PYTHAGOREANS, AND DRUIDS.—ALSO, AN INQUIRY INTO THE ORIGIN, HISTORY AND PURPORT OF FREE MASONRY; by JOHN FELLOWS, A. M.; New York, Printed for the author, and sold by GOULD, BANKS & Co.—"This book" says a capable correspondent who took the book from our table, and returned it with this notice, "treats a subject of great interest to the learned world. It is composed of translations from eminent writers, on the subject of the Ancient Mysteries, accompanied with notes by the author, and dissertations upon the ceremonies of Masonry, their relation to the rites of the Egyptians, and those practised in the celebration of the mysteries of Eleusis. The work appears to us inartificial and confused, and wanting that unity of effect and consistency of design in the conduct of the argument, which a profound knowledge of the original sources, and a practised pen would have imparted. The author does not appear to have seen some of the modern works on different branches of his subject, or to have pursued the striking analogies which the Phallic worship, and the practices of Manicheism, might perhaps have afforded. But still the work is characterised by industry, and the love of truth, and we think will afford to the reader, many new ideas, and lead to some startling inferences. It is curious that a work on the same subject, has just appeared in England, which is highly spoken of, but which has not reached us.—We have no time to follow the writer through his book, or to give any quotations from it. His object is to prove, that in the higher mysteries of Greece and Egypt, the unity of God was taught to the initiated, in opposition to the Polytheism which formed the debasing creed of the common people.—Of this there has long been no doubt. That Masonry also inculcated the existence of one Supreme Governor of the Universe—that its emblems are mainly derived from Egyptian Mythology, from the worship of Isis and Osris, and the strong astronomical character, which every thing Egyptian bears. And so far as we can judge, we think the writer has been successful.

Mr. Fellows has made, in this volume, allusions to the fact of many of the ceremonies and observances of the Christian church being of Pagan origin. This is a very intersting subject, but by no means a new one. We recollect reading a work some years ago, by Mr. Blunt, a Fellow of Oxford, in which he showed clearly, at least to us, that the ceremonies of the Church in the island of Sicily, and particularly of the Cathedral of Syracuse, were almost identical with the honors formerly paid there to Ceres. There is another fact not mentioned in this work, that the peculiar insignia of the festivals in honor of Bacchus, were engraved on the *abacus* of the Grand Master of the Knight Templars. After all, perhaps learning of this description is more curious than profitable—more suited to the closets of the learned, than the consideration of the humble and devout Christian.

THE STUDY OF MEDICINE; by JOHN MASON GOOD. 6th American from the last English edition—with Notes, by A. SIDNEY DOANE, A. M., M. D., &c. &c. 2 vols. 8vo. New York, HARPER & BROTHERS.—This is really a mighty publication—two stereotyped volumes, of double columns, and of seven hundred and fifty pages in each volume. The mere pecuniary outlay in such a re-print as this, with the numberless additions—which in this instance, *are* improvements—by the accomplished American editor, cannot fall short, we presume, of twelve or fifteen thousand dollars.

We cannot doubt, however, that it will prove a judicious outlay. Dr. Good's work has been for years, a text book in England, and in this country—but the excellence, and the great recommendation of this edition, to American students and medical establishments, is in the notes due to the research, ability, practical knowlege, and perseverance of the American editor, *Dr. Doane*—a gentleman, who by diligent study and assiduous application, has eminently qualified himself for the task—greatly above the reach of any ordinary capacity or acquirements—of *fitly* editing, and illustrating by notes, such a standard work as this.

The advantage, and the need among us, of an edition thus enriched, are t us modestly glanced at in Dr. Doane's preface·

"It was with extreme diffidence, and with no little dread of appearing presumptuous, that the American Editor assumed the responsibility of adding notes to a work characterized by such profound learning and deep research; but he was encouraged by the consideration, that although "The Study of Medicine" has been used as a text book, for several years, in this country, and, is thought to be indispensable to every American Library; it contains but few allusions to American practice; while, some forms of disease peculiar to this country, and the contributions of American Physicians to Physiology, Pathology, Therapeutics, and the Materia Medica, are generally unnoticed in it."

This, it will be admitted, are all sufficient reasons for undertaking the task—and, in recommending the book as one of great general interest, and information, to persons in, and out of, the medical profession, we repeat, that so far as our knowledge enables us to judge, Dr. Doane has performed his part, with remarkable ability and discrimination.

FOSTER'S SYSTEM OF PENMANSHIP, &c. &c.; by D. B. FOSTER, Teacher of Writing and Bookkeeping, &c. 1 vol. Boston, PERKINS, MARVIN & Co.—We like the evidence afforded by this title page, that the writing master is not above his business, or his proper title, and that instead of calling himself Professor—as is the wont now-a-days of all teachers, from the dancing, fencing, or boxing master, up—he qualifies himself simply as teacher. We do not doubt the rules laid down in this treatise are sound, and will lead, if duly followed out, to excellence--though they are rather calculated to dispel the dreams of those, who flatter themselves with the possibility of learning the art and mystery of writing, in twelve hours. Apropos, however, of this treatise, and of the anti-angular *Mr. Bristow*—whom it treats as not of the regular faculty—it is only fair to say, that within a few days, a clever young lawyer of our acquaintance, who, to cure "a c——d cramped hand," had put himself under the teaching of Mr. Bristow—called upon us full of delight at the result, and with an earnest request that we would publish a glowing, though somewhat *lengthy*, recommendation he had indited, of "the anti-angular system." He must take this notice as a substitute therefor.

NUTS TO CRACK, or QUIPS, QUIRPS, ANECDOTES, &c., OF OXFORD AND CAMBRIDGE SCHOLARS; by the author of FACETIAE CANTABRIGENSES, &c.: 1 vol. Philadelphia, CAREY & HART.—There is some fun and amusement in this little volume, though too scholastic some of it, we apprehend, for the medium of this country. We take from it, however, some extracts.

THE VALUE OF A SYLLABLE.—"The masters of olden time at Athens, and afterwards at Oxford, were called *Sophi*, and the scholars *Sophistæ*; but the *masters* taking it in scorn that the *scholars* should have a larger name than they, called themselves *Philosophi*,—that is, lovers of science, and so got the advantage of the scholars by *one syllable*." Every body has heard of Foote's celebrated motto for a tailor friend of his, about to sport his coat of arms,—"*List, list, O list!*" But every body has not heard, probably, though it is noticed in his memoir, extant in Nichols's Literary Anecdotes, that the learned Cambridge divine and antiquary, Dr. *Cocks Macro*, having applied to a Cambridge acquaintance for an appropriate motto to his coat of arms, was pithily answered with "COCKS MAY CROW."

Every Cantab remembers and regrets the early death of the accomplished scholar, Charles Skinner Mathews, M. A., late Fellow of Downing College, who was "the familiar" of the present Sir J. C. Hobhouse, and of the late Lord Byron. He was not more accomplished than facetious, nor, according to one of Lord Byron's letters, more facetious than "beloved." Speaking of his university *freaks*, his lordship says, "when Sir Henry Smith was expelled from Cambridge, for a row with a tradesman named "*Hiron*," Matthews solaced himself with shouting under Hiron's window every evening—

"Ah me! what perils do environ
The man who meddles with *hot Hiron!*"

CLASSICAL JEU D'ESPRIT.—Vere one day asked his learned college contemporary, Dr. John Taylor, editor of Demosthenes, "why he talked of selling his horse?" "Because," replied the doctor, "I cannot afford to keep him these *hard times*." "You should keep a *mare*," rejoined Foster, according to Horace—

'*Æquam* memento rebus in arduis
Servare.'"

INVETERATE SMOKERS.—Both Oxford and Cambridge have been famous for inveterate smokers.—Amongst them was the learned Dr. Isaac Barrow, who said "it helped his thinking." His illustrious pupil, Newton, was scarcely less addicted to the "Indian weed," and every one has heard of his *hapless courtship*, when, in a moment of forgetfulness, he popped the lady's finger into his burning pipe, instead of *popping the question*, and was so chagrined, that he never could be persuaded to press the matter further. Dr. Parr was allowed his pipe when he dined with the *first gentleman in Europe*, George the Fourth, and when refused the same indulgence by a lady at whose house he was staying, he told her, "she was the greatest *tobacco-stopper* he had ever met with." The celebrated Dr. Farmer, of *black-letter* memory, preferred the comforts of the parlor of Emmanuel College, of which he was master, and a "*yard of clay*," (there were no *hookahs* in his day,) to a bishopric, which dignity he twice refused, when offered to him by Mr. Ritt. Another learned

LOVER OF TOBACCO,

And eke of wit, mirth, puns, and pleasantry, was the famous Dr. Aldrich, Dean of Christ Church, Oxford, the never-to-be-forgotten composer of the good old catch—

"Hark, the merry Christ-Church bells,"

and of another to be *sung by four men smoking their pipes*, which is not more difficult to sing than diverting to hear. His pipe was his breakfast, dinner, and supper, and a student of Christ Church, at 10 o'clock one night, finding it difficult to persuade a "freshman" of the fact, laid him

A WAGER,

that the Dean was at that instant smoking. Away he hurried to the deanery to decide the controversy, and on gaining admission, apologised for his intrusion by relating the occasion of it. "Well," replied the Dean, in perfect good humour, with his pipe in his hand, "you see you have lost your wager: for I am not smoking, but filling my pipe."

AN EPIGRAM ON A PETIT-MAITRE PHYSICIAN.

When Pennington for female ills indites,
Studying alone not what, but how he writes,
The ladies, as his graceful form they scan,
Cry, with ill-omen'd rapture, "*killing man!*"

Dr. Parr like the great moralist, Johnson, he had an aversion to *punning*, saying, it exposed the *poverty* of a language. Yet he perpetrated the following

THREE CLASSICAL PUNS:

One day reaching a book from a shelf in his library, two others came tumbling down, including a volume of Hume, upon which fell a critical work of Lambert Bos: "See what has happened," exclaimed the Doctor, "*procumbit humi bos.*" At another time, too strong a current of air being let

into the room where he was sitting, suffering under the effects a slight cold, "Stop! stop!" said he, "this is to much; at present I am only *par levibus ventis.*" When he was solicited to subscribe to Dr. Busby's translation of Lucretius, published at a high price, he declined doing so, by observing, at the proposed cost it would indeed be "Lucretius carus."

PALEY'S SKETCH OF HIS EARLY ACADEMICAL LIFE.—In the year 1795, during his visits to Cambridge, Dr. Paley, in the course of a conversationon the subject, gave the following account of his own academical life; and it is here given on the outhority, and in the very words, of a gentleman who was present at the time, as a striking instance of the peculiar frankness with which he was in the habit of relating adventures of his youth. "I spent the two first years of my under-graduateship (said he) happily, but unprofitably. I was constantly in society where we were not immoral, but idle and rather expensive. At the commencement of my third year, however, after having left the ususal party at rather a late hour in the evening, I was awakened at five in the morning by one of my companions, who stood at by bed-side and said, 'Paley, I have been thinking what a d——d fool you are. I could do nothing, probably, were I to try, and can afford the life I lead: you can do every thing, and cannot afford it. I have had no sleep during the whole night on account of these reflections, and am now come solemnly to inform you, that, if you presist in your indolence, I must renounce your society. I was so struck (continued Paley) with the visit and the visiter, that I lay in bed great part of the day and formed my plan: I ordered my bed-maker to prepare my fire every evening, in order that it might be lighted by myself; I rose at five, read during the whole of the day, except such hours as chapel and hall required, allotting each portion of time its peculiar branch of study; and, just before the closing of gates (nine o'clock) I went to a neighboring coffee-house, where I constantly regaled upon a mutton-cop and a dose of mik punch: and thus on taking my bachelor's degree, I became *senior wrangler.*" He, too, filled the trust-worthy and dignified office of Tutor of his College, and deserved, though he did not die in possession of, a bichopric.

AMERICAN TURF REGISTER AND SPORTING MAGAZINE. Vol. VII, No. 1. Baltimore. GIDEON B. SMITH. This sporting periodical does not flag under the guidance of its new Editor. Mr. Smith. From the September No., we extract an account, by Commodore Porter, of the Arabian horse, differing in many respects from any, we remember to have seen before.

GENUINE ARABIAN HORSE—HOW DISTINGUISHED.—About a month since I saw a singularly beautiful light chestnut sorrel horse standing in my yard, no one was holding him, his bridle was laying over his neck, and the person having charge of him was standing behind him, platting his beautiful long silky tail, which trailed on the ground; he appeared to be full of life, spirit and intelligence, and as docile as a dog.

There was something so fascinating in the appearance of this animal, something so gazelle-like, that I was determined if he was for sale I would have him *coute que coute.* His age I ascertained to be a little over seven years. He had come from the city of Suliemanich, in Thaurdistan, which is a province bordering on Persia on one side, and on the other side by the Pachailic of Bagdad, which latter borders on the great desert of Arabia. The horse belonged to an Agha, who had recently arrived from thence; he said the horse was a little sick, and would not eat, and that as the Agha was compelled to return immediately, he had offered the horse for a sum which no one knowing the value of a Thaurdistan horse could refuse to give. I finally closed the bargain for the horse, adding a present of two hundred and fifty piastres to the groom.—After trying the horse under the saddle, and approving of his gaits and fleetness, I sent for the sultan's farrier, who the moment he saw the horse pronounced him not only a pure Arabian, but a beautiful one, and said that he had seen but one so pure before in his life.

I now sent immediately to the Agha to request him, if in his power, to give me the pedigree of the horse; he sent me word that he did not know his pedigree, nor did the person from whom he bought him—that the Kurds when they stole a horse, stole only the best, and did not stop to inquire after the pedigree; but if I wished to satisfy myself that the horse was of the pure Arabian breed, I must examine his neck, on both sides of which I should find a beautiful natural tree projecting upwards from half way down the neck, and that I should find spurs on his fetlock joints, both of which were certain indications of the purity of his blood.

About half way down his neck, a few inches from the mane on both sides, I found a round dark spot, rather larger than a duck shot, destitute of hair, but around these, to the size of a dollar, the short and silky hair made several eccentric turns, then shot up towards the ears in the form of an ostrich plume; nothing can be more beautiful, a spur of two inches long, of the size of the little finger, at the root, gradually tapering to a point, and turning up like those of a cock. On the hind fetlocks were the same, but not more than half the length—all were slightly fringed about the root with soft silky hair.

On being satisfied of the value of this horse, which circumstances had placed in my possession, I told the doctor to go to work and cure him if possible. He felt the pulse of his legs, then examined his mouth, and felt his ears, and turning to me, said, he had the *guênz kémick*, which when translated means the eye bone, or bone eye. Never having heard of such a disease, I asked him what it was; he thrust his finger into the lower part of the horse's eye, and turning the lower lid wrong-side out desired me to feel of it. I did so, and felt a hard bony substance; the lid was much inflamed. He now thrust a needle with horse hair through the black rim of the inner lid, and pulling it out of the eye, cut therefrom the bony substance. The eye bled perhaps a half spoonful; he performed the same operation on the other eye, after which he blew up each nostril through a short reed, about a spoonful of burnt alum and black peper, which brought on a violent sneezing. He then directed that some garlic, vinegar and salt should be mixed with a kind of red earth, which had the appearance of red ochre, and that his mouth should be washed with it three or four times a day, for four or five days; he next scarified his mouth and put him into the stable. We have followed his directions, and the horse, that for a long time past would not touch barley, now eats it freely, and is to all appearance well.

This disease and mode of treatment is to me altogether new—it may not be so to others. From the inquiries I have made I am satisfied that in ten days more the horse would have been ruined—the farrier said he would have been in five. The disease, it is said, is brought on by straining their eyes in anxious waiting for their food. A Turkish horse is double haltered to both ends of his trough, so that he cannot turn his head, which of course brings a great strain on the eye when he wants to look on one side or other.

I have measured this horse from the shoulder to the ground—he is exactly four feet, nine and a half inches, (fourteen hands, one and a half inches high.) Those who know Eclipses, say that this horse is a highly flattering likeness of him. I shall keep the horse, although I have been strongly advised to send him to America, but I am apprehensive it might turn out like many, nay, I may say all such speculations. But if you know of any one who wishes this horse, they may write to any disinterested person in this country to examine and report on him, and then we will agree on the terms.

I am satisfied there is not another Arabian in Constantinople; the sultan's horses are generally spotted, very fat, and very spirited; they look extremely well with their tappings on; but I am assured that he has not a pure Arabian among them.

THE REPUBLIC OF LETTERS; vol. III. edited by Mrs. A. H. Nicholas; New York, GEO. DEARBORN.—Here is another admirable volume of miscellaneous reading, made up of the weekly numbers of the Republic of Letters. The contents of this, are the conclusion of *Elia*, lives of eminent British Statesmen, the well remembered *Simple story*, by Mrs. Inchbald, and the *Bee*, a collection of Essays. by Goldsmith. We have only to renew our warmest commendation of this publication, and of the taste and discrimination with which it is edited.

ORMSBY'S PENTOGRAPHIC MACHINE has just turned out another gem—a profile medallion likeness on a large scale of *Chief Justice* MARSHALL. The medallion from which the engraving is executed, was modelled by *Launitz* after the bust by *Frazee*, and the Pentograph has done ample justice to the model. It is a capital performance.

## FOREIGN INTELLIGENCE.

MASSACRE AT PARA.—We cannot give place to the account of the horrid massacres and devastations, at the above place, without expressing both surprise and indignation, that this Government, though again and again warned of the unsettled state of things among the natives, and of their hostility to the whites—should not have sent, and kept there, or in the vicinity, some one of our ships of war. For want of such protection, the American Consul, and other Americans have lost their property, and been obliged to flee for their lives, with just the clothes they stood in. The English and the Portiguese had ships of war there, and they afforded to their countrymen, a refuge, both for their persons and property. Our trade with Para, which exceeds that, we believe, of any other nation, and the lives of our citizens, were not thought worthy of similar protection. The result will be read, in the annexed details:

REVOLUTION AT PARA, AND MASSACRE OF THE INHABITANTS.—We learn from Capt. Tuttle, from Para, arrived yesterday afternoon, that the Tapulians, (Natives) made an attack on Para on the night of the 14th of August, succeeded in taking it on the 23d, and made a general massacre of all the white inhabitants they could get at, the majority of which had taken boats on the first alarm. The American Consul got on board of the brig Mercator, which sailed 7 days before for this city, having lost all his effects, and happy to escape with his life. The brig was compelled to leave all her papers. Com. Morris of the Brazilian Navy, having in command 2 frigates, 2 corvettes, 1 brig, and 1 schooner of war, together with a Portuguese vessel of war and one English men of war, assisted the President in repelling the Natives, but without success, and dropped down to Cape Antonia on the 24th, having on board 3000 inhabitants who had escaped.

Landing the females and children at the Island of Mirago under the care of a guard, the men he had organized for the purpose of re-taking the place if possible. Com. Taylor had declared the city of Para under blockade. The brig Mercator, with the American Consul, C. J Smith Esq. passenger on board, has arrived since we received the account of the Revolution at Para by Capt. Tuttle. We learn from her the following additional particulars. The President having taken no precautionary measures against this attack, which was daily expected, and of which he had been repeatedly advised both by deserters and by letters, by the Chief of the Rebels, (Antonio Vinagre) who had threatened to fall upon the city, unless his brother, Pedro, who was then a prisoner on board the Mexican ships of war, was released. The foreigners and native residents had confided in the strength and wisdom of the Provincial Government, and of the efficiency of the Marine Department for protection, that they postponed embarking until absolutely surrounded by the natives, not allowing themselves time to save their clothing or valuable effects, and some not even a shift of clothing. Our countryman, Mr. Upton, had barely time to flee on board, leaving his books in his Counting house, which were thrown into the street and destroyed.

The Indians were seen firing from the windows of the American Consul's house at the English marines stationed at Mr. Campbell's opposite, and the U. S. flag was torn up.

It was supposed the slaughter must have been immense as the motto of the Indians has been "extermination of the whites," and a more complete sack of any city probably never took place, than in this instance.

The brigs Malta and George were bound for Maranham full of passengers. The Br. sloop of war Race Horse, with all the English merchants on board was bound for the same place in a few days.

The Indians had about 150 to 200 armed men.—The President had 300 men under him, ready for service, and several pieces of artillery which were left unspiked, and were fired from by the natives, at the whites in their retreat. The British and Portuguese vessels of war, each landed from 90 to 100 men to assist the authorities, but seeing their pusillanimity, they embarked again for their vessels.

## NINE DAYS LATER FROM EUROPE.

### England.

[*From the Morning Chronicle of the 19th.*]

The Lords made great strides last night in the further demolition of the Municipal Reform Bill, all the clauses of which (with the exception of those postponed and the schedules) have gone through the Committee. When the Bill as amended is printed, it will hardly have one feature in common with that sent up from the Commons. In an early part of the evening Lord Melbourne declared that "so much had been done to render the bill inefficient, that he would not make any strenuous opposition to the amendment then under discussion (for continuing the present justices of peace in boroughs,) nor would he to any amendment that might hereafter be made, seeing that it was almost useless.—But when these amendments were adopted, it would then become a matter for serious consideration, whether, in the circumstances, it would be well to go on farther with the measure."

We will not fatigue our readers by a minute notice of the various alterations made last night. It would be a libel on the Commons to suppose that they will sanction alterations which have completely changed the character of the measure. The Lords have been feeling the pulse of the nation and of the Commons. They have, as usual, been laboring under a strange infatuation with regard to the indifference of the country to good government. Indeed, what can be expected from men who have no fellowship with the people, and are the dupes of every silly tale that is told them by their creatures. For instance, what could be more silly than the statement of the Earl of Galloway last night, that Mr. Douglas, lately a candidate for the representation of Glasgow, had made seditious speeches with the red cap of liberty on his head? Mr. Douglas was suddenly called on to speak from an inn window at a small town in the south of Scotland in the month of January, and he happened to have his travelling cap on. No man, but one ignorant and utterly unacquainted with the character and habits of the people of Scotland would have swallowed such an absurdity. Lord Galloway may be taken for a sample of his order. But the Lords will soon be undeceived. However, we will not anticipate the proceedings of the eventful days on which we are about to enter. We leave the Lords to the Representatives of the empire in full confidence that they and the ministers will do their duty.

London, August, 21, 1835.—The Municipal Corporation Bill can no longer be said to be the measure which passed the House of Commons; and that the house will not of course acknowledge it. The Report is to be brought up on Tuesday next, when Lord Melbourne will no doubt state the intentions of Ministers with regard to the further progress of the measure.

Nothing is more striking than the change in the language adopted at public meetings with regard to the Peers which has taken place within a year or two. The Tory Lords have completely succeeded in impressing the people with the belief that till a reform takes place in the Lords, no benefit will be derived from the reform of the Commons.

Money Market—London, August 22.—The improvement in the English Funds, which became manifest after the notice at the bank exhibited yesterday, of the intention to make advances upon stock, was continued this morning, and Consols, both for money and account, were done at 90, and omnium at 3 premium; towards the close of the day, however, they recurred to the last prices of yesterday, and left off, the former at 80 3-4 to 7-8 the latter at 2 3-4 to 7-8. Exchequer Bills and India Bonds have suffered no change; Bank Stock and India Stock have each advanced 1-8 per cent.

For a time the foreign market evinced a tendency to improvement; Portuguese Bonds were done at 88 3-4 and 56 3-4; Spanish Cortes Bonds at 43 3-4, and Scrip at a discount of 15 3-4; but this amelioration was not permanent, they all declined rapidly in the latter part of the day, and the final quotations, as compared with those of yesterday, showed a depreciation in Portuguese Bonds of 1-2 per cent, in Spanish Cortes Bonds and Scrip of 1 1-2 per cent, and in Passive and Deferred Stock of 3-4 per cent.

### France.

Our usual express has brought us the Paris papers of 20th. The Chamber continued on Wednesday to be occupied with the new laws on the press and the jury, but we have not room for the debate.

An amendment was proposed by M. Teste, to the effect that when a condemnation should be pronounced only by a simple majority, the capital punishment it might involve should be converted into perpetual imprisonment, or the galleys for life.—This amendment was rejected.

The Secret Vote next occupied the Chamber.—As the jury are allowed to deliberate among themselves, it is thought that real secrecy cannot be obtained. On the question of transportation being discussed, M. O'Dillon Barrot described with great eloquence the cruelty and injustice of combining the two punishments of incarceration and banishment, which the law had hitherto always separated. This brought up M. Duchatel, who pointing significantly towards the Opposition, said that the proof of the efficacy of this punishment was, that it was capable of frightening the enemies of the Government. At this outrageous allusion a part of the Chamber rose en masse, a deafening tumult ensued, and M. Duchatel was obliged to explain his expessions.

Fieschi, it is said, has solicited Mons. Claix d'Est Ange, one of the most celebrated barristers of France, to undertake his defence.

We received, at a late hour this morning, the Paris papers of Tuesday. They bring us an account of the first debate on the New Jury Law. Some amendments were proposed. Monsieur Hebert wished that the Court of Assizes should, as in 1831, be called upon to decide between the majority and the minority of the jury, when the majority should not exceed seven. M. Jolivet proposed that that court should be empowered to annul the sentence of the jury—in cases only of condemnation—when it should appear unjust; in which event the cause should be referred to another session of assizes. M. Vatout said that he shrank from the thought that one single man might henceforth send a man to the scaffold. During the discussion the centres kept a continual buzz, which made the debates almost inaudible. The Ministerial orators were hardly applauded; the Opposition speakers could scarcely get a hearing at all. The amendment of M. Hebert may probably be carried, for the question will then be readily abandoned to the judges, and the court will virtually pronounce the verdict. The amendment of M. Jolivet has no chance of being adopted.

The Court of Peers yesterday pronounced sentence on 24 of the prisoners of April, declared to be contumacious. Three of these were acquitted; one condemned to transportation; and the rest to various periods of imprisonment, varying from 10 to 20 years.

Bourse—Paris, Thursday, August 20.—Half past Three—The market has been again depressed, with, at times, somewhat more business than yesterday. For Money, the Five per Cents. have declined 20c., and the Three per Cents. 15c. For the Account, the depression has been a shade more in the Three per Cents.—opened at 78f. 85c., they rapidly went down to 78f. 79c., and fluctuated 5c. for some time, and then giving way, they closed at 78f. 60c.; at one period the money price was higher than for the account, viz. 78f. 70c. against 78f. 65c.

The continuation of accounts of the risings in Spain, demanding of the Government more energetic measures against the Carlists, has tended to further lower the Spanish Securities.

### Spain.

The following extract from the Journal du Commerce of Valencia, of the 7th instant, gives further details of the late disturbances in that city. "On Wednesday evening the report spread that the factions had entered Villa Real, and committed unheard-of atrocities on the Urban Militia of that city:—Nothing could exceed the pride and insolence of the Carlists. They outraged the Liberals in every manner they could think of. The patience of the inhabitants of Valencia was at last exhausted. The Urban Militia were called to arms. It was easy to see that the object of this was to chastise the Carlists, who, taking advantage of a scandalous impunity, would have proceeded to still greater excesses. There were then in the prisons a multitude of prisoners whose crimes demanded prompt punishment. That this should be inflicted the Urban Militia demanded in a manner at the same time respectful and energetic. The Commandant, the Count D' Almodovar, promised to take this demand into consideration, and also to adopt other popular measures, such as the dismissal of suspected servants of the Government, and the suppression of convents. For the greater security, the Militia took upon itself the responsibility of guarding the prisoners from the prisons of Cuarte, Serranos, St. Narcessa, and the ecclesiastical places of captivity. They were accordingly conducted, to the number of more than one hundred, to the guard-house of the market place. The judicial authorities expeditiously tried the most criminal, and at four o'clock Portambec, Palmeroles, the Canon Astolosa, Father P. Lopez, two of the assassins of Paniagua, and another well known for his crimes, were shot in the square of the old custom-house. The others were conducted to Grao, to be embarked and transported to Centa. The last words of Portambec, uttered with a loud voice, at the very moment of his execution, were—'Vive Charles V!'—'Death to the factious.' Two of the prisoners, declared innocent, were restored to their families."

Letters from Madrid, dated the 14th inst., say that disturbances similar to those at Barcelona, Saragossa, and Valentia, had broken out at Cadiz, but had immediately been suppressed by the firmness of the authorities of that town.

The Madrid Gazette, of the 10th, says that an extraordinary courier had been despatched to Lisbon in order to hasten the entry of the Portuguese auxiliaries into Spain.

The Journal de Paris has the following:—"Don Carlos marched on the 15th towards Vittoria.—Cordova who is at Logrono, observes all his movements. Three battalions of Carlists arrived on the 12th inst. at Aoyz. Their intention seems to be to enter Arragon; but Iriarte, who arrived the same day from Pampeluna with his division, and Guerrea, who is at Artajona also with a force, are in readiness to prevent this movement. The same journal informs us of an arrangement for the pacification of Spain, attributed to Las Amarillas, and which it is said the Queen and Count Toreno have approved of. This project is to be laid by France before the Congress of Toplitz, to receive the concurrence of the sovereigns of the north, and their intervention, which its execution will make necessary. The following are the terms to be proposed:—1st. Isabella II. is to marry the eldest son of Charles V. 2. Don Carlos is to abdicate in favor of his eldest son. 3. This abdication will cause the law of exclusion against Don Carlos and his family to be annulled. 4. The three sons of Don Carlos are immediately to enter Spain, escorted by 25,000 French, and a single regiment of English. The eldest son is to take the name of Louis II., and will be proclaimed King of Spain conjointly with his esport. 5. All the powers of Europe are to recognize his Government. 6. A pension of five millions of reals is to be granted to Don Carlos. 7. The Queen is to have three millions of reals, but must live at fifty leagues distance from the Court. 8. The Estatuo is to be maintained. 9. The privileges of the Basque provinces and of Navarre are to be preserved and guaranteed by France and England. 10. An amnesty for all political offences to be proclaimed. 11. A general liquidation of debts contracted at all periods, even the loans raised by Don Carlos included, to take place. 12. All special measures respecting the army and administration are to be adopted immediately by Louis II. 13. English and French troops are to remain in Spain as long as Louis II may judge it necessary. 14. The Cortes are to be assembled as soon as the Government shall think fit, in order to recognize the new Government, and take the oath of allegiance.

"Bilboa," adds the same correspondence, "is observed as far as Portugalete, by the Carlist troops under the orders of Saroza; and St. Sebastian by the division of Miguel Gomez, who has his head quarters at Urnista." There is a report which has been taken up by one of the French papers that the republic has been proclaimed at Saragosa; that all the authorities have been expelled from the town, and that the whole surrounding country has submitted to the government of a republican junta.

The Indicateur de Bordeaux of the 15th does not confirm the intelligence it contained the preceding day, of the rising of the four provinces, Catalo-

nia, Arragon, Valencia, and Murcia, with the declaration of their independence of the Queen's Government. The Republic has not, it says, been proclaimed, but representations have been addressed to the Queen to demand a more liberal administration. A conspiracy, says the Phare de Bayonne, has been discovered at Carthagena. Its object was to proclaim Don Carlos, and assassinate the Liberals. A letter from the Aid-de-camp of Don Leon Iriarte asserts that the loss of the Carlists in the engagement at the Bridge of Sanguessa on the 6th instant amounted to 80 killed, 100 wounded, and 12 prisoners.

The Journal de Paris informs us that General Coluby, Governor of Tarragona, has taken refuge in France, in consequence of disorders, similar to those at Barcelona, having broken out in his government.

The following is an official account of the disorders which took place at Valencia on the 6th inst. It is dated August 7th:—"The people of Valencia—excited by the momentary advantage which a band of factious men, commanded by Quillet and Serrader, had gained over a column of 500 men, who were in pursuit of them—rushed in a mass to the prisons occupied by some persons detained there for political offences, and having, with the help of the Urban militia, got them out, conducted them to the central guard house, and demanded that the Military Commission should summarily judge their cause. The Captain General immediately hurried to the spot to appease the tumult, but he was not listened to, and the disorder continued to increase, in spite of the efforts of the authorities and the presence of 300 artillerymen. The Captain-General then assembled the battalions of the militia, although they were not complete, many of the privates of that service being among the anarchists, and those who were present to act against their comrades, if the justice demanded, were not promptly accorded.—The tumult went on increasing, and the country people flocked together to enter the city, and take part in it. In the midst of this conflict, the military commission, some chiefs of the militia, and other influential persons, met together at the house of the Captain General; and after vain attempts to appease the people, and to gain over the militia, determined to try at once three individuals accused of a crime which is subject to a sentence of death. This resolution was not deemed sufficient by the mob. The anarchists insisted that four others also should be tried at the same time. They threatened to kill the prisoners, who were very numerous, if their demand was not granted. This menace, which might have been put into execution without hindrance, decided the fate of the seven prisoners; they were shot, and the others transferred to another prison. The Urban militia then submitted to the authorities, and order was re-established.

Private letters from Bayonne inform us that Don Carlos had arrived on the 10th of August at Puenta Larra, with six batalions and four squadrons of lancers, and was expected to be joined by three additional squadrons. These forces passed the Ebro on the morning of the 10th, for the purpose of attacking the Christinos under the orders of Bedoya, in the environs of Pancorbo. The movements of the Carlists towards Castile are watched narrowly by Cordova, who is in march with his whole force towards Haro. The Brigadier General Giurque, four battalions of Navarrese, three of Castilians, two strong guerillas, and a squadron of lancers, were operating to enter into Arragon.

Another insurrection (says the same correspondence) broke out at Saragossa on the 10th. The news arrived at Bayonne by express, on the evening of the 14th. The Governor is reported to have been assassinated; the troops expelled from the town; the Constitution of 1812 proclaimed; and popular authorities substituted for those of the Queen.

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LATER FROM EUROPE.—The *Napoleon*, packet from Liverpool of the 24th ult., furnishes us London dates to the 23d, and Paris of the 20th.

In England the municipal corporation bill absorbed all interest. It had been so modified by the House of Lords, where it was still under discussion, that it is no longer the same bill, and it is confidently said the Commons will not accept such a mutilated thing. Great excitement prevailed in the kingdom, and of course, against the Lords, who are supposed to be thwarting the popular branch.

In France the *gag-laws*—outrageous any where, and especially outrageous in a country with a written charter, guaranteeing the liberty of the press—were under discussion in the Chamber of Deputies. All material amendments are repelled, and there seems little reason to doubt, that the bills will pass as proposed by ministers.

The affairs of Spain seem no nearer any peaceful issue. The forces of Carlos do not quail before those of the Queen, augmented though they be, by foreign auxiliaries.

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[*From the Atlas.*]

THE TWO DEAF GENTLEMEN.

TRANSLATED FROM THE FRENCH.

"Sir, your dinner is served up!"

"Well—but I do not wish to dine alone—can't you find some other traveller in the hotel?"

"We have only one—and I will invite him if you wish; but I forewarn you that he is as deaf as an adder."

"No matter, I will halloo."

And the boy who had improvised this piece of pleasantry—which the reader will, according to his taste, think either good or bad—went to invite the traveller. "A stranger," said he, "desires to have your company at dinner, but I consider it my duty to inform you that he is so deaf that he wouldn't hear thunder strike at his side."

"No matter, I will halloo."

The two gentlemen greeted each other with a silent bow, took their places and commenced an insignificant conversation on the rain and the fine weather, upon the object of their travels, and other common matters. The first speaker began by singing out pretty loud; the other answered in a still louder tone; the reply waxed louder, like the ascension of the gamut, and so the rejoinder, always *crescendo*.

I have seen in the course of my sea-voyage, two unfortunate younkers, guilty of some petty larceny, on whom their superiors inflicted a novel punishment. They had been condemned to whip each other reciprocally, first one striking and then the other, a blow with the cat-o'-nine-tails. The one who began struck only a light blow; his comrade felt it however, and struck in his turn, still feebly, but with a little more force. The third lick was laid on without hesitation, the fourth with a spirit of vengeance, the fifth with fury, and the two little unfortunate devils, ended by beating one another as hard as they could lay it on, crying as loud as they could bellow.

So did our travellers; at each reply the voice increasing its tone, they began at last to yell with open mouths, and would have used speaking trumpets could they have had them at their command.

One of them at last said:

"Sir, were you deaf born or by accident?"

"What do you call deaf? Deaf yourself, and with a witness."

"Ah! good heavens! you are so very deaf that our conversation will destroy my voice for six weeks, at least."

"Poor man, you believe that all the world is afflicted with your infirmity."

"Ah, Sir! I pity you sincerely; but do not insult me by trying to throw a bundle on me, of which I cannot relieve you."

The boy perceived that the conversation was about taking a serious turn. He spoke some words in a low voice which both the deaf gentlemen heard wonderfully well—and which let them into the secret. They had the good sense to laugh at the joke—but some difficulty, during the remainder of the dinner, to descend to an ordinary diapason, after the vocal efforts they had made.

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[*From the National Gazette.*]

LAMARTINE'S PILGRIMAGE.—M. de Lamartine, the French poet, has won all suffrages by his *Pilgrimage to the Holy Land*, of which four European editions have already appeared. The author before he left Paris, had prepared his readers for the kind of work they were all to expect on his return from that glorious country, to which his thoughts had so often wandered. "I go," were his words, "to seek for individual inspiration on that great theatre of the religious and political events of the ancient world. I think not of writing; but I go to read, before I die, some of the brightest pages of the book of nature. And if poetry shall find there any images, or new and fruitful themes of inspiration, I shall content myself with treasuring them in the silence of my bosom, to color the brief literary future which may be in store for me." Probably no work in the French language contains a passage of greater ardor, or nobler eloquence, or deeper sensibility. The pilgrim carries the reader along with him through all his wanderings in the land of miracles, where the burning sun, the rushing eagle, the barren fig tree—all the poetry and all the pictures of the bible are visible; where, in his passionate words, "every name unfolds a mystery, every cave speaks of the future, every hill responds with the warning of a prophet; where the dried-up torrents, the cleaved rocks, the open graves, attest the supreme power of the deity, and the wilderness itself seems dumb with terror, as though afraid of breaking the silence which hung over it since the voice of the Almighty first resounded within its borders" Chateaubriand, if not eclipsed, has at least found a rival in this new poet-traveller, whose work is justly regarded as one of the most remarkable, valuable and curious.

We learn that it is now partly in type in this country and will be issued immediately in Waldie's Select Circulating Library, a vehicle which, from the great extent of its subscription, is calculated to afford gratification in the perusal which a mere small book edition could not give. The work is an expensive one in Europe, but we suppose will be reduced on the Waldie principle to a moiety of a dollar.

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NAVAL.—The U. S. schooner Grampus, Captain Ritche, arrived at Pensacola, on the 27th ult. The Grampus sailed on the 9th August, bound to Matamoras, Galveston, &c. in Mexico, and when in lat. 27 22, long. 94 40, experienced one of the hurricanes which are so common in the Gulf of Mexico at this season; it lasted 48 hours, during which time the Grampus sustained much damage—the hammock nettings stove in, main jib boom carried away, sails and rigging much injured, and the officers and crew suffered considerably. On the 19th inst. discoverd a wrecked sail to windward. The Captain stood for the wreck, which proved to be the schr. Watchman, Capt. Murray, four days from Rio Grande, bound to New Orleans, with $100,000 on board, many passengers, among whom were the ex-vice President and family of Mexico. Capt. Murray of the Watchman made his distressed situation (as the W. was dismantled and without masts, sails, boats, &c.) known to the commander of the Grampus, who furnished him with spars, sail, &c., and safely landed him at the S. W. Pass of the Mississippi river on the night of the 25th.

[*From the New Haven Herald of Wednesday.*]

The steamboat *Boston*, from New York for Providence, was run into by a schooner under full sail, and showing no lights, on Monday night, and was so much damaged as to be obliged to put into Huntington harbor for repairs. She sailed again and arrived at Providence next day. The imprudence of vessels running in the sound at night without hoisting a light, is so apparent, that it cannot be justified. Penal enactments should oblige every shipmaster under sail to give fair warning of his position and approach.

From Charleston, by the *Steamboat*, we have papers of Saturday evening,

The annexed is the only item of interest:

CHARLESTON, Saturday Afternoon.—*Effects of the Gale.*—A gale of wind commenced on Tuesday last from N. E. to E. which continued from that quarter until yesterday noon, when it suddenly shifted to S. E. thence to S. S. E., and blew with great violence. Little or no damage was done to the shipping, owing to the greatest violence of the gale being from S. The Spanish brig Isabella the 2d, lying for several days in the stream opposite Magwoods's wharf, was driven into Fraser & Co's. wharf, after parting her cable and dragging her anchors, destroying her boat, and losing one man overboard, in what manner is not known. The packet ship Saluda was driven high up the dock at Boyce & Co's. wharf, where she is aground.—The sloop Martha and Jane, lying at Williams's wharf, had her larboard side stove in and sunk. A wood schooner was also sunk at Mey's wharf. A schooner called the Farmer, lying in Ashley River, was driven ashore on the east side, a little above the bridge, where she is aground. The Steam Packet Etiwan lost her figure head and a few stunchions.

The South pier of Chisolm's wharf received con-

siderable damage, also a small pier at Vanderhorst's wharf. Gibbs's wharf is likewise badly injured, and some damage has been sustained at Williams's wharf, the south side of which is gone. Gadsden's North wharf has received considerable damage, the head being swept entirely away, as has also Norton & Carroll's wharf.

The Bathing House on East Bay, which has stood sixteen years, is so much injured as to be beyond repair.

We have heard of no injury in the city, with the exception of some fences and trees blown down.

We learn from several persons who visited Sullivan's Island this morning that no damage whatever was sustained there. The tide did not rise higher than an ordinary Spring tide.

Much damage has no doubt been done to the Rice and Cotton Crops, at points exposed to the influence of the gale.—[Southern Patriot.]

SHIPWRECK.—Captain Norris, of the brig Crusader, from Neuvitas, informs us that when coming down the river, he was boarded by Capt. Hoskins, of the schooner Sophia & Eliza, of Hartford, 17 days from Edenton, for Kingston, Ja., with staves, &c. who stated that his vessel was totally lost on the 18th ult. at half-past twelve at night, about 6 miles east of Neuvitas Bay, having mistaken the land for St. Domingo, in consequence of passing the Leeward Islands without seeing the land while lying to in a hurricane on the 15th. The crew, with Dr. M. E. Sawyer, of Edenton, a passenger, all saved. The natives began plundering the vessel, and the captain was going in a government boat to take off the crew, and save what part of the cargo he could.

FROM ANTIGUA.—The Wilmington People's Press has received Antigua papers to the 18th ult. The hurricane of the 12th was terrific in that Island. It began at 4 o'clock, P. M. and continued till midnight. When it was passed, "the town presented a painful scene of wreck and ruin, in a wide wasting havock and a confused intermixture of fragments of houses, trees, inclosures, &c. Accounts from the country state that buildings, sugar works, and fields of the plantations, present an equally frightful picture. The loss is estimated at nearly half a million of dollars. 20 schooners and 2 brigs were driven on shore. Several blacks were killed on the plantations, by the falling in of the houses, &c."—[Jour. of Com.]

OUTRAGE AT STATE PRISON.—On Saturday last, after dinner, Harvey Griswold, a convict, became disobedient, and refused to leave his cell with the other prisoners, to go to his work. Information of his conduct having been conveyed to Capt. Pillsbury, the Warden, he, with Mr. Cooledge, the assistant warden, repaired to his cell, to ascertain the cause. After a little conversation, Griswold told them he did not feel disposed to work, and that he should not leave his cell; Capt. Pillsbury stepped in, and took him by the collar, when a scuffle ensued, during which Griswold drew a knife he had concealed in his coat sleeve, and struck at Capt P.'s head or throat; the blade entered the Captain's left shoulder partly on the back, to the depth of one and a half or two inches, and about four inches long. Mr. Cooledge in the meantime seized him, and soon received a dangerous cut on the wrist, which bled so profusely that he was compelled to go immediately to the Hospital for aid. In the meantime, Capt. Pillsbury was engaged unarmed, with the assassin, and received another severe wound from his knife in the thigh. What appears very remarkable is, that Capt. P., although he felt something like a shock of electricity, when Griswold struck the first blow, did not know that he was wounded until he had forced Griswold half way to his work. Feeling the blood trickle down his back, and discovering his wound in his thigh, the convict was immediately remanded to his cell, where he will remain until the next session of Court, to be tried for the offence.

We are pleased to learn, that although both officers were severely wounded, they are considered out of danger.—[Hartford Times.]

MORE CRIME.—A black man was killed in the Swamp, on Sunday night. The act was perpetrated by a white woman, in a negro hovel. She alleges it was to protect herself from the most offensive violence, to which her character, most probably, induced the attempt. The circumstances of the case, favor this conclusion.—She is in prison for trial.—[Cincinnati Gazette.]

[*From the Cincinnati Gazette.*]

EXTRAORDINARY.—Mr. Joshua Trotter, of Springborough, Warren county, Ohio, has been absent from his family for about two weeks. His absence was to them wholly inexplicable and excited great apprehension. On Sunday, Sept. 13, he came to this city on his return home, and gave the following account of his absence.

He came to Cincinnati, Saturday, August 29, where he transacted some business and received a small sum of money. On Sunday morning, Aug. 30, after breakfast, he set out for home, on horseback. On the hill road to Carthage, between four and five miles from Cincinnati, at a convenient place for instantly secreting him, he was suddenly dragged from his horse by two footmen whom he had just passed. His horse was turned loose, and himself blindfolded, and silence enforced by threats of instant death. His money, about 150 dollars, was taken from him, with inquiries indicating that a mistake had been made in the person seized and in the amount of his money. He was detained all day blindfolded, and at night conducted, in the same condition, to the river, where he was put on board a boat, so fitted that he was confined in an apartment where he could make no observation of what was passing around him. In this way he was carried down the Ohio river to a point below the Yellow Banks, where, on Wednesday night, September 10, he was taken up a high bluff to a distance from the river, and set at liberty. He came to Cincinnati on his return, as stated, and was accompanied to the scene of the robbery by some friends. Upon inquiry, his horse, saddle and bridle were recovered, having been taken up almost directly after his capture. Mr. Trotter is represented to be a respectable man, worthy of belief. The solution of his story would seem to be this: that arrangements had been made to rob and kidnap some person, and after seizing him, the alternative was to murder him or to proceed. He was captured and blindfolded so suddenly, that he has no distinct knowledge of the physiognomy of the persons that seized him.

THE REGATTA.—A more beautiful afternoon never graced a public exhibition than that of Monday last. Our glorious bay was studded with boats—some steaming, some sailing, and some rowing—the battery, in its whole length—the neighboring wharves—and the Castle of the garden—were alive with spectators, anxious to witness the friendly rivalry of the Amateur Clubs. The result is well told by the Gazette, the respectable senior Editor of which, awarded the prizes.

The boats took their places on starting in the order previously arranged, and, according to the report of the judges, arrived as follows:

1. Wave—time 34 minutes.
2. Eagle—time not noted.
3. Dolphin, do.
4. Neptune, do.
5. Wakona, do. (4 oars)
6. Atlantic, do.
7. Jersey, do. (4 oars)

The distance performed was 5 1-2 miles.

Four splendid silver pitchers were then presented to the members of the successful clubs by the judges, the senior of whom prefaced his remarks with the following address.

*My young friends,*—By your kindness and politeness I have been appointed one of the Judges of this afternoon's exhibition, the first of the kind ever presented to an American public, for which I beg leave to thank you. To you, gentlemen, belongs the credit of giving origin to such manly exercise, which tends to promote health, strength and longevity. If it be said that you are imitating the Lords and gentlemen of England in their Regattas, the most fastidious moralist cannot complain, while you devote no hours for rational exercise but those on which your various occupations have no claim. —Your early rising, and a tug at the oar, give a zest to your daily business, and prepare you for the acquatics of the evening, accompinied by your mothers, sisters, and sweet-hearts, the witnessing of which has often almost induced me to wish that I were young again. Proud as I feel on this occasion, I have yet to perform the most gratifying part of my duty; and now gentlemen of the *Wave*, I feel honored in presenting you a PITCHER composed of one of the most precious metals, as a small tribute of reward for amateur superiority. In doing this, it delights me, and it must be equally gratifying to those around you, to find among your young aquatic companions, that not one evinces an expression of countenance that is not in unison with your own.

You have, gentlemen, this day set a noble example to the young men of this great and growing city—and while you continue to act within the rules of strict propriety, your Regattas will not only not be opposed but patronized by the best members of the community.

May you live long, be prosperous and happy.

The several members of the Clubs replied in an appropriate manner, after which, with a large number of guests, they partook of a repast appropriate and splendid.

THE ROWING MATCH between the officers of the Pique and the Quebec Amateurs, and a second one between the seamen of that frigate and the boatmen of the Quarter-Master General's department, will come off to morrow, at 11 o'clock in the forenoon; distances, three miles for the first, and four miles for the second, marked off before the town. The Pique's boat is a gig, named the Cat and the Fiddle, 30 feet in length, and the town gig the Water Witch, 35 feet, both four-oared.—[Quebec Gazette.]

THE BALLOON ASCENSION.—Wednesday afternoon, Mr. Lauriat made an ascension from Castle Garden, in the presence of many thousand spectators, not however with his *daughter*, as was anticipated, by reason of the deficiency of gas. They both seated themselves in the car, but before it had ascended above the railings of the Garden, it was dashed against them with much violence, and serious consequences must have followed but for the prompt assistance received at the precarious moment by those persons who were nearest them. Instead of being intimidated by this accident in the outset, the intrepid æronaut and his fair companion still expressed a desire to persevere; when, the car being adjusted, those who held the cords, let go, but with no better success than attended the first effort, for although all the disposable baliast was instantly thrown out, there was not enough power to carry them further than the promenade on the Battery, outside of which the balloon descended, and was secured. After this second abortive attempt, it was evident to all that the balloon was not sufficiently inflated to ascend with both passengers, and the lady was induced to abandon her intended trip, which she did reluctantly, and we are happy to add, without having received serious injury.

After being thus lightened, Mr. Lauriat ascended, amidst the cheers and plaudits of the spetators. The balloon passed over the eastern part of the city, in the direction of Williamsburg, Long Island.—[Mercantile.]

We have been furnished by a friend with the following census of the Eighth Ward:—[Evening Post.]

Allowing an everage estimate for familes yet out of town, the population of the Eighth Ward is about 27,500. The excess of females is about 2500. The rate of the Eighth Ward, for the last few years, has been about *one tenth* of the whole city rate; it is therefore reasonable to suppose the population to be in the same ratio, which will make the inhabitants of this city amount to at least 275,000. In 1830, the 8th ward contained 20,729 people, and the city 203,000.

SHIP CANAL.—The corps of United States Engineers who for the last five months have been engaged in surveying several routes for a ship canal around the Falls of Niagara, through this county, have at length finished the work intrusted to them. The result of their labors will be submitted to Congress at an early day. In the mean time we would state, for public information, that the proposed canal is considered quite practicable, and that too, at a cost far less than the great importance of the work would warrant. We trust, therefore, that no efforts will be spared to induce Congress to order the construction of this important link in the navigation of the great lakes.—[Niagara Courier.]

CANAL TOLLS.—The tolls on the New York Canals for the two first weeks in Sept. amount to the sum of $101,080 22. This exceeds the receipts for the corresponding two weeks in 1834 by the sum of $24,750 41; and it exceeds the receipts for the same time in 1833, when the tolls on merchandise were 25 per cent higher than now, by the sum of $14,731 21.

The whole tolls from the opening of navigation to the 14th Sept., amount to the sum of $963,310 22; being an increase, from last year, up to the same time, of $179,750.—[Albany Argus.]

The Commercial Agent of the United States at Antigua, writes to the Secretary of State that the Governor of that Island has opened the port for six months from the 14th August, for the importation in vessels of all nations, duty and tonnage free, of the following articles, viz:—Flour, corn, and pulse of every description; corn meal; salted, dried, and pickled fish; salted pork and beef, mill timber, and lumber of all kinds; staves, shingles, and wood hoops.

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The following Poem, by Lord *Bacon*, is now just published for the first time, in a new life of the author:—

The world's a bubble, and the life of man
less then a span.
In his conception wretched, from the wombe,
so to the tombe;
Curst from the cradle, and brought vp to yeares,
with cares and feares.
Who then to fraile mortality shall trust,
But limmes the water, or but writes in dust.
Yet since with sorrow here we liue opprest:
what life is best?
Courts are but only superficiall scholes
to dandle fooles.
The rurall parts are turn'd into a den
of sauage men.
And where's a city from all vice so free,
But may be term'd the worst of all the three?
Domesticke cares afflict the husband's bed,
or paines his head.
Those that liue single take it for a curse,
or doe things worse.
Some would haue children, those that haue them, mone,
or wish them gone.
What is it then to haue or haue no wife,
But single thraldome, or a double strife?
Our owne affections still at home to please,
is a disease,
To crosse the sea to any foreine soyle
perills and toyle.
Warres with their noyse affright vs: when they cease,
W'are worse in peace.
What then remains? but that we still should cry,
Not to be borne, or being borne to dye."

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CIRCULAR. To ENGINEERS and Superintendants of Railroads and Canals.—I am preparing to issue a new edition of my RAILROAD AND CANAL MAP; and being desirous to correct the errors of the first edition, I take the liberty to request the ENGINEER, or SUPERINTENDENT, of every Railroad and Canal in the UNITED STATES, to furnish me at his earliest convenience with a *full* and *precise* account of the condition of the railroad under his direction or charge. He is requested to state the length of the road, the number of miles completed, the elevation it surmounts, the radius of its curves, the style of its construction, its average cost per mile, the number, if any, of inclined planes, with stationary engines—*in short, every thing which may be of interest* to engineers, or others who may be connected with the subject of Railroads and Canals.

To such as comply with the above request, and furnish the desired information previous to the *first of August* next, a copy of the new edition of the Railroad and Canal Map, will be sent, by mail or otherwise, as may be directed, as soon as completed.

D. K. MINOR.

New-York, June 27, 1835.

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**RAILROAD IRON.**

300 tons of Railroad Iron of the T pattern, just imported and for sale by HOWLAND & ASPINWALL,
s28 10t 55 South street.

**TO CONTRACTORS FOR EXCAVATION AND MASONRY.**

PROPOSALS will be received at the Office of the Philadelphia and Reading Rail Road Company, in Philadelphia, on the 19th and 20th days of October next, for the Grading and Masonry, of about sixteen miles of the Rail Road between Pottsgrove and Norristown.

In this distance, a large amount of heavy work, deserving the attention of skilful and competent Contractors, is to let. The Jobs of most magnitude, are a Tunnel 600 yards long, and a Bridge across the Schuylkill, near Phoenixville.

Plans and profiles of the line, and drawings of the different constructions on it will be exhibited, and all other information in relation to it will be afforded, on application at the Engineer's Office, at Pottsgrove, for ten days previous to the letting. MONCURE ROBINSON, C. E.
Philadelpeia, Sept. 2, 1835. s2 3tawtO19

**RAILROAD CASTINGS.**

MANY & WARD, Proprietors of the Albany Eagle Air Furnace and Machine Shop, will make to order car wheels, chairs and knees, and every other description of castings required for railroads. R-1y feb14

**PARTNER WANTED.**

Wanted, a partner in an extensive Printing Establishment. No one need apply who is not a thoroughbred printer, competent to superintend and direct an office in which upwards of 30 persons are employed, and able to furnish $3000 cash capital. The best of references will be given and required. Letters, with *real* name, may be addressed to P. P. P., Post Office, New-York, postage paid, and they will be promptly attended to. May-tf

**AUBURN AND SYRACUSE RAILROAD.**
NOTICE TO CONTRACTORS.

Sealed Proposals will be received until the 15th day of October next, at noon, by the undersigned, Chief Engineer and Agent of the Auburn and Syracuse Railroad Company, for the Grading, Masonry, and Bridges on said Road.

Individuals disposed to contract for the execution of the whole or any part of the work, will be furnished on application at the Office of the Company in Auburn, with blank forms of proposals, and printed specifications.

The contracts will be formed in the usual manner—a specific price being stated for each item of work, which price is to include the cost of material and labor required in rendering the work complete.

The proposals to be accompanied with the names of sureties, and where the parties are unknown to the undersigned or resident Engineers, the usual certificates of character and solvency will be required.

Individuals who have been employed on other works, must furnish satisfactory recommendations from the Engineer or Superintendents of the same. A rigid adherence to the conditions of each contract will in all cases be required.

It is desired that all the work in each section, including Grading, Culverts, and Bridges, should be embraced in the same contract, and it is requested that the proposals be made accordingly.

The plans of the different structures will be ready for examination at the Office aforesaid, by the 1st day of October next. EDWIN F. JOHNSON,
Chief Engineer & Agent A. & S. R. R. Company.
Auburn, Aug. 22, 1835. 37—t15O

**AMES' CELEBRATED SHOVELS, SPADES, &c.**

500 dozens Ames' back-strap and plain Shovels,
75 do do round-pointed do
150 do do cast steel Shovels and Spades,
100 do do Socket Shovels and Spades,
150 do do steel plated Spades,
Together with Pick Axes, Churn Drills, and Crow Bars, steel pointed, made from Salisbury refined iron. For sale by his Agents,
WITHERELL, AMES & CO.
2 Liberty street, New-York.
BACKUS, AMES & CO.
34—ytf 8 State street, Albany.

**RAILROAD IRON WORK,**

Of all kinds, made to order by GODWIN, CLARK & CO., Paterson, New-Jersey.

CAR WHEELS, BOXES, AXLES, and CAR SPRINGS, made and fitted complete, at short notice, and fair prices.

Orders addressed to them at Paterson, N. J., or 24 Broad street, N. Y., will meet with immediate attention.
Paterson, Aug. 19, 1835. 34—1y

**STEPHENSON,**

*Builder of a superior style of Passenger Cars for Railroad,*
No. 234 Elizabeth street, near Bleecker street, New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad now in operation. J26 tf

**RAILROAD CAR WHEELS AND BOXES**
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to.
Also, CAR SPRINGS.
Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR

**PATENT RAILROAD, SHIP AND BOAT SPIKES.**

☞ The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.
HENRY BURDEN, Agent.
Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 229 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.
JJ23am H. BURDEN.

**TO TUNNEL MINERS, DRILLERS, &c.**

Wanted, immediately, 40 Tunnel Miners, (Cornish Miners will be preferred,) 80 Drillers, 50 Laborers, and two experienced Mine Blacksmiths, on the New-York and Harlem Railroad, about five miles from the City. Liberal wages will be given, and cash payments made every fortnight. Apply at Mr. FOWLER'S, St. John's Hall, Frankfort street, New-York.
JOHN RUTTER, Contractor.

☞ The Albany Argus, Philadelphia U. S. Gazette and Pennsylvanian, will please copy this, and send their bills to the Railroad Company, 14 Wall street, New-York. 23—tf

**PATENT HAMMERED SHIP, BOAT, AND RAILROAD SPIKES.**

☞ Railroad Spikes of every description required, made at the Albany Spike Factory.

Spikes made at the above Factory are recommended to the public as superior to any thing of the kind now in use

Ship and Boat Spikes made full size under the head, so as not to admit water.

Orders may be addressed to Messrs. ERASTUS CORNING & CO., Albany, or to THOMAS TURNER, at the Factory, Troy, N. Y. sept. 13-1y

**RAILWAY IRON.**

| | | | | |
|---|---|---|---|---|
| 195 tons of 1 | inch by | ½ inch, | *Flat Bars* in lengths o |
| 200 do. 1½ | do. | ¾ do. | 14 to 15 feet, counter sunk |
| 40 do. 1½ | do. | ¾ do. | holes, ends cut at an angle |
| 800 do. 2 | do. | ¾ do. | of 45 degrees, with spli- |
| 800 do. 2½ | do. | ¾ do. | cing plates and nails to |
| soon expected. | | | suit. |

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels

Axles of 2½, 2¾, 2¾, 3, 3½, 3¾, and 3¾ inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

**SURVEYORS' INSTRUMENTS.**

☞ Compasses of various sizes and of superior quality warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by
E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maiden lane.

**SURVEYING AND ENGINEERING INSTRUMENTS.**

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*, among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also a Railroad Goniometer, with two Telescopes—and a Leveling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,
Mathematical Instrument Maker,
No. 9 Dock st., Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.
Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee the following information. The whole number of Levels now in possession of the department of construction of thy make is seven The whole number of the "Improved Compass" is eight These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet rised in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Sup't of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1832.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.
E. H. GILL, Civil Engineer.
Germantown, February, 1832.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.
HENRY R. CAMPBELL, Eng. Philad.
m1 1y Germant. and Norrist. Railroad